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School Nurses' Attitudes and Perceptions Toward Supporting Students with Chronic Health Conditions in an Ecological System

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by

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Dedication

To Susan Singleton and Dr. Lisa Singleton:

Thank you for your unconditional love and support.

You are my role models that I will always aspire to be.

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Abstract

Chronic health conditions impact one in four school-aged youth (Van Cleave, Gortmaker, & Perrin, 2010). Supplemental to the medical challenges that students with chronic health conditions face, they also are at risk for a variety of academic, behavioral, and social-emotional adversities. Using an ecological approach for addressing the diverse needs of students with chronic health conditions has been deemed valuable due to the array of key stakeholders, institutions, policies, and cultural norms that impact the development of the pediatric population. A key stakeholder in supporting the functioning of school-aged children with chronic illnesses is the school nurse. School nurses' skills in screening, communicating with physicians, consulting with parents, providing school-based health services, developing health plans, promoting healthy school environments, and evaluating health policies has led to them being identified as leaders in the delivery of services to students with diverse health needs (Committee on School Health, 2001). The purpose of this study was to gain a clear understanding of school nurses' practices and perceptions collaborating in an ecological system to support students with chronic health conditions. Interviews were conducted with ten school nurses who vary in personal and professional characteristics. The epistemological and ontological assumptions of this study aligned with a post-positivist paradigm and in-depth interviews were conducted accordingly. Thematic analysis procedures endorsed by Braun and Clarke (2006) were used to identify, analyze, and report patterns in the data, and deductive and inductive approaches were completed to identify themes. Findings in the current study determined that the extent to which a child's

symptoms were managed played an essential role in their academic outcomes. Furthermore, school nurses perceived children with chronic illnesses as having both adaptive and possible maladaptive symptoms. Nurses identified teachers, administrators, school psychologists, social workers, school counselors, and medical providers as being beneficial in facilitating care for children with chronic illnesses. Concerning collaborative practices, nurses stated their primary objectives for collaborating with stakeholders were to improve children access to medical services, develop individualized health plans, and provide interventions and accommodations. School nurses accomplished these objectives in various ways, including being aware of the community's resources, understanding processes for delivering student's services, and being proactive in advocating for their students' needs. These findings emphasize how school nurses work within and across the school, family, healthcare, and community systems to enhance this population's outcomes.

Chapter One: Introduction

Statement of Problem

Many students in the American educational system are impacted by one or more chronic health conditions. Alongside the medical adversities that impact these youth, they also are at risk for a host of cognitive, behavioral, and psychological challenges that can impede their well-being. Efforts need to be devoted towards investigating the current practices that are being conducted to support the diverse needs of this population.

Overview of Chronic Health Conditions

A chronic health condition is an illness that is persistent for three or more months and can be regulated but not cured (National Cancer Institute, 2019). Common chronic health conditions that impact school-aged youth are asthma, obesity, and diabetes (Centers for Disease Control and Prevention [CDC], 2015). Each condition presents unique medical challenges that can interfere in a child's physical health. Supplemental to the medical concerns that can impede the health of children in this population, chronic health conditions can impact a child's academic and psychological functioning. Research reveals that youth with chronic health conditions have lower performance on standardized mathematics and language arts tests (Quach, Nguyen, O'Connor, Wake, 2017; Crump et al., 2013), and lower skills in writing, numeracy, and science in comparison to youth without chronic health conditions (Hoffmann et al., 2018). Studies also report neurocognitive deficits in attention, visual and verbal memory, information processing speed, and language, in students with leukemia (Campbell et al., 2007), brain tumors (Robinson

et al., 2010), and diabetes (Karsdorp, Everaerd, Kindt, & Mulder, 2007). Regarding their psychological functioning, youth with chronic medical challenges are at risk for co-morbid mental health concerns including substance abuse, self-harm, suicidal ideation, and suicide attempts (Barnes, Eisenberg, & Resnick, 2010). The complex needs of students with chronic health conditions warrant an ecological approach to service-delivery to ensure holistic treatment.

Conceptual Framework

Bronfenbrenner's (1977) Developmental Ecological Model and Nastasi and colleagues' (2000) Participatory Intervention Model (PIM) will serve as the conceptual frameworks for this study. Bronfenbrenner (1977) describes a multi-systematic model for analyzing the different factors contributing to a child's development. In this model, the child is at the center and around the child are four systems theorized to impact their functioning. The level closest to the child is the microsystem encompassing the individuals and organizations that are in their immediate surrounding. Examples related to students with chronic health conditions include parents, hospitals, medical providers, schools, and school professionals. The second layer is the mesosystem and involves the collaboration between different entities in the microsystem. For instance, a school nurse collaborating with a medical provider to develop a treatment plan that adheres to the medical needs of a student is an example of an action that occurs in the mesosystem. Outside of the mesosystem is the exosystem defined as social structures or events that a child is not overtly interacting in, but that still may have consequences on their development. For example, a parent's military deployment can influence the availability of family resources, the child's daily routine, and the child's emotional well-being. The last system in Bronfenbrenner's Ecological Model is the macrosystem. This level entails cultural and political practices that influence a child's well-being. Legislations such as Section 504 of the

Rehabilitation Act of 1973, Americans with Disabilities Act (ADA), and Individuals with Disabilities Education Act (IDEA) detail the rights of students with chronic health conditions and grant them access to general or specialized education, health-related services, and accommodations that allow them to remain and succeed in school (Cortiella & Boundy, 2018). Cultural factors such as race, ethnicity, language, demographic area, and socioeconomic status can influence the development of a child with a chronic illness. For instance, a family that speaks predominately Spanish may have difficulty securing a provider that shares their native language which jeopardizes the child's access to care.

The second framework is the Participatory Intervention Model (Nastasi et al., 2000). This framework highlights the importance of including relevant stakeholders in the three stages of service delivery - participatory generation, natural adaption, and essential changes. Stakeholders that play an integral role in the development of youth with chronic health conditions can include family members, primary care providers, principals, teachers, school psychologists, and school nurses. Together, these individuals use culturally-sensitive practices to identify a student's problem areas, analyze the individual, environmental, and cultural factors that are impeding in their success, develop goals, and create a treatment plan (i.e., participatory generation); monitor the student's progress towards their goals (i.e., natural adaption), and evaluate the student's performance to determine the appropriate next steps (i.e., essential changes).

A stakeholder that is consistently identified as being relevant in the school setting for supporting youth with chronic health conditions is the school nurse (Committee on School Health, 2001). School nurses can perform many roles in the educational system including screening, provision of school-based health services, developing health plans, promoting healthy school environments, evaluating health policies, and coordinating care between families, the

education and healthcare systems, and community agencies (Magalnick & Mazyck, 2008; McClanahan & Weismuller, 2015). School nurses' interconnectedness with different individuals and organizations associated with a child who has a chronic illness allows them to be an appropriate avenue for acquiring information concerning the practices that are being completed to support these youth. Consequently, the current study aims to understand school nurses' perceptions and practices working with stakeholders in an ecological system to support students with chronic health conditions.

Ecological Approach for Treatment Implementation: Perspective of School Nurses

A handful of studies have investigated school nurses' practices and perceptions collaborating in an ecological system to support youth with chronic health conditions. Regarding the stakeholders who school nurses identify as being integral in supporting youth with chronic conditions, research is present on school nurses' perceptions of the roles and responsibilities of themselves (Moyers, Bugle, & Jackson, 2005; Terry et al., 2016; Brown, Looman, & Garwick, 2019;), school psychologists (Singleton, 2019), and the school system for serving youth with chronic health conditions (Kruger, Toker, Radjenovic, Comeaux, & Macha, 2009). When asked about their collaborative practices with key stakeholders, findings related to the extent school nurses' collaborate with nursing assistants, secretaries, teachers, primary care providers (Baker et al., 2015) and school psychologists (Singleton, 2019) is present.

Purpose of the Current Study

To extend the existing literature, the purpose of the current study was to understand school nurses' practices and perceptions developing and implementing services within an ecological system to support students with chronic health conditions. Learning this information entailed conducting in-depth interviews with a sample of school nurses that were diverse in

personal and professional characteristics. The interview guide in this study was developed based on Bronfenbrenner's (1977) Developmental Ecological framework, and included questions that pertained to school nurses' perceptions of the academic and psychological impact chronic health conditions can have on the functioning of a child, relevant key stakeholders in supporting students with chronic health conditions (i.e., microsystem), and their practices collaborating with these key stakeholders (i.e., mesosystem), to provide services to youth with chronic health conditions.

Significance of the Study

The findings from this study have a multitude of implications for practice and research. For school psychologists, enhancing our understanding of the current practices that are being implemented by school nurses allows us to brainstorm ways we can use our expertise and skills in assessment, intervention, evaluation, and problem-solving to work in partnership with school nurses to enhance the well-being of youth with chronic illnesses. This can be especially meaningful for school psychologists with an emphasis in pediatric psychology, which is a unique and continuously evolving branch of school psychology that calls for school psychologists to engage in interdisciplinary practices to plan, deliver, and evaluate services for students with chronic health conditions (Power & Bradley-Klug, 2013). Additionally, through this research, school psychologists can increase their capacity in collaborative practices that can occur to support these students. The findings from this study can impact the practices of school nurses because this study provided detailed information on specific practices that school nurses engaged in to support their students with chronic health conditions. Additionally, due to the anticipated diversity of the sample, these findings may allow school nurses to learn and reflect on the experiences of other providers, and acquire strategies that may be applicable to the environment

in which they are working. In essence, this information is advantageous for professionals who are interested in enhancing their knowledge of supporting youth with chronic health conditions using an ecological lens.

Research Questions

1. What are school nurses' perceptions of the impact chronic health conditions have on students' academic and psychological well-being?
2. What key stakeholders and organizations do school nurses identify as being integral to supporting youth with chronic health conditions in schools?
3. What are school nurses 'practices collaborating with pertinent stakeholders and organizations that they identify as being important in supporting youth with chronic health conditions?

Definitions of Key Terms

- A *chronic health condition* is defined as an illness that lasts three or more months and can be controlled but not cured. Examples include asthma, obesity, and diabetes. Non-examples include a cold, stomachache, or a headache (National Cancer Institute, 2018).
- *Collaboration* is defined as two or more people working together to plan and problem-solve for a third-party. Collaboration involves ongoing, bidirectional problem-solving efforts to promote positive outcomes for students. An example may include when a school nurse provides ongoing consultation with a parent to develop a treatment plan that addresses the child's needs. A non-example includes a one-time phone call to a pediatrician to collect information regarding a child's medication plan (Bradley-Klug, Sundman, Nadeau, Cunningham, & Ogg, 2010).

- A *school nurse* is defined as a practitioner who is employed in a school setting and provides acute and chronic health care for children. Responsibilities may include assessment and treatment within the scope of professional nursing practice, communication with parents, referral to physicians, screening and referral, and provision or supervision of prescribed nursing care (Committee on School Health, 2001).
- *Microsystem* is defined as the key relations an individual has with the individuals and places in their immediate surroundings (Bronfenbrenner, 1977). Examples pertaining to students with chronic health conditions include parents, doctors, hospitals, and teachers.
- *Mesosystem* is defined as the interrelations between the individuals and places that are located in the microsystem (Bronfenbrenner, 1977). Examples include interactions between family and school staff, or between school staff and the child's medical team.

Chapter Two: Literature Review

This literature review provides an overview of pertinent topics relevant to this study. First, the prevalence of chronic health conditions and the impact chronic illnesses have on the academic and psychological functioning of the pediatric population will be presented. Next, Bronfenbrenner's (1977) Developmental Ecological Model and Nastasi's (2000) Participatory Intervention Model which will be reviewed as these models will serve as frameworks for this study. Key stakeholders that are critical in serving youth with chronic conditions, school nurses' current perceptions and practices working within an ecological system to support school-aged students with chronic health conditions, and gaps that exist in the literature will then be discussed. This chapter will conclude with a description of the study.

Prevalence and Impact of Common Chronic Health Conditions

A chronic health condition is defined as an illness that lasts three or more months and can be controlled but not cured (National Cancer Institute, 2018). It is estimated that between 15-20% of school-aged children are impacted by a chronic health condition (Jin, An, & Wang, 2017). The high prevalence of chronic health conditions has warranted the development of initiatives, psychoeducational modules, and tools from leading health agencies such as the Centers for Disease Control and Prevention (2019), World Health Organization (2019), and the National Institute of Health (2019) to address the prevention and intervention of chronic diseases. Despite the strategies that have been implemented in communities, the rate of illnesses in the pediatric population continues to rise (Van Cleave, Gortmarker, & Perrin, 2010). This

suggests a need for further investigation of current practices that aim to support youth living with chronic health conditions.

One of the most common chronic health conditions that impacts school-aged children in today's educational system is asthma. It is estimated that approximately 8.4% of children and youth ages 18 years and younger have this condition (CDC, 2015). According to the American Lung Association (2019), asthma is the inflammation of the airways that lead to the lungs. Symptoms of asthma include shortness of breath, coughing, or wheezing. A variety of environmental factors including cold weather, dust, airborne chemicals, smoke, or pet dander can exacerbate symptoms. Current literature on asthma reveals that children and youth with this condition report a variety of aversive experiences due to their symptoms. Van den Bemt and colleagues (2010) conducted five focus groups with children ages 6 to 11 years old to understand the impact asthma had on their daily functioning. Children reported that asthmatic symptoms such as wheezing, dyspnea, and coughing inhibited their ability to run and be active in sports, made them more at risk for being bullied by peers, and limited their capability to concentrate in school. Regarding school performance, Castillo (2008) found that reduced play activity, sleep disruption, fatigue, inattention, and absenteeism impacted the educational prosperity of students with asthma. Research demonstrates that a practice that can help control a child's asthma is adherence to a medication plan. In a sample of 318 children ages 5 to 17 years old, adherence to treatment was reported in only 55% of participants (Diette et al., 2001). Sleath et al. (2018) also found a low frequency of treatment adherence amongst their participants with asthma, and the researchers noted that children's difficulty with remembering to take their medication and complications using medication at school inhibited adherence to their plan. These findings

suggest that exploring strategies for helping children comply with their treatment plan may result in more overall positive outcomes, including attendance in school.

A second chronic health condition that is highly prevalent in the pediatric population is obesity. Obesity impacts approximately 31.8% of children ages 2 to 19 years of age (Ogden, Carroll, Kit, & Fleagal, 2014). According to the CDC (2015), a child is considered obese if their body mass index is above the 95th percentile for an individual of the same age and sex. Gungor (2014) claims obesity is caused by a combination of genetics and social factors including physical environment, media and marketing, social-economic influence, energy consumption, and expenditure. Obesity can place a child at risk for an array of medical complications such as hypertension, dyslipidemia, insulin resistance, prediabetes, and type 2 diabetes mellitus (Gungor, 2014). Alongside the medical risks that may impact youth with obesity, research shows that children with this disease also have poorer academic and psychological outcomes than children who are not obese. Concerning academic success, Asirvatham, Thomsen, and Nayga (2019) found an inverse relationship between obesity and performance in literacy and math skills, demonstrating that high levels of obesity were associated with low skill performance in literacy and math skills. Consistent with the trend found in students with asthma, children who are obese miss more days of school in comparison to children who are not obese (Schwimmer, Burwinkle, & Varni, 2003). When investigating these student's psychological functioning, Puhl, Peterson, and Luedicke (2012) explored weight-based victimization among 361 adolescents who were obese and found that the majority of the participants experienced victimization by peers and friends in the form of teasing, relational victimization, cyberbullying, and physical aggression. The majority of adolescents reported being victimized in a variety of locations at school including the classroom, stairs/hallway, cafeteria, sports-related locations (i.e., gym, PE class,

sports practice, or athletic field), locker rooms, bathrooms, as well as through social media, on the computer, and on their phone. Harassment is concerning and can lead to a host of negative psychological outcomes for students such as low self-esteem, depression, suicidal thoughts and behaviors, and skipping school (Eisenberg, Neumark-Sztainer, & Story, 2003; Puhl & Luedicke; 2012). Consequently, it is imperative that school personnel set practices that can prevent the maltreatment of students in the school setting, and they have the supports to identify and treat students who are experiencing poor psychological functioning.

The last chronic health condition that will be discussed in-depth is diabetes. According to the American Diabetes Association (2019), an estimated 193,000 individuals ages 20 years or younger are currently living with either Type 1 or Type 2 diabetes. Type 1 diabetes develops when the body destroys pancreatic cells which are responsible for making insulin, and Type 2 diabetes forms when the body is not able to produce insulin (Rapp, 2015). Treatment for diabetes requires a combination of insulin shots, glucose monitoring, and a balance of healthy eating and physical activity (Rapp, 2015). Comparable to the diverse needs of students with asthma and obesity, researchers have postulated that school-aged children with diabetes are at risk for a range of challenges. In a metanalysis by Kucera and Sullivan (2011), multiple studies concluded that children with Type 1 diabetes "exhibit a slower response rate, difficulty with abstract reasoning and cognitive flexibility, memory problems, and an overall cumulative negative cognitive effect" (p. 592). Similarly, data by Parent, Wodrich, and Hasan (2009) showed that children with diabetes exhibited lower performance in writing, a lower attention span in class, and higher rates of school absences in comparison to their siblings without diabetes. Research also reports that children with diabetes exhibit lower well-being than children without diabetes. Jones, Lawson, Daneman, Olmsted, and Rodin (2000) reported that adolescent and post-

adolescent young women with diabetes are 2.4 times more likely to develop an eating disorder in comparison to age-matched women without diabetes. Polonsky et al.(1994) also uncovered that 30% of adolescents with Type 1 diabetes who took insulin exhibited subclinical symptoms of disordered eating including restrictive eating, obsession with weight and shape, guilt after eating, and misusing insulin for weight control. Negative outcomes that can result from disordered eating when one has diabetes include low adherence to treatment, poor glycemic control, and microvascular complications (Nathan et al., 2009). Elevated levels of depressive symptoms also have been reported in 1 in 7 youth with diabetes, which is double the prevalence in the general pediatric population (Hood et al., 2006). These statistics provide further evidence of the need for investigating the supports that are provided to students with chronic health conditions.

General Academic and Mental Health Outcomes in Pediatric Population

Supplemental examples of chronic health conditions that are prevalent in children are cancer, cystic fibrosis, epilepsy, spina bifida, and acquired immunodeficiency syndrome (Michigan Medicine, 2012). Regardless of the specific disorder that a child might have, medical adversities can prevent a child from successfully navigating through their daily activities. One significant responsibility that children and youth have is to attend school in a public or state-accredited establishment or through homeschooling. Primary and secondary education is fundamental for students to gain academic, behavioral, and social-emotional skills to allow them to be successful in adulthood. However, some students with chronic health conditions experience hardships in their academic and psychological well-being which can interfere in their ability to be successful. Being knowledgeable of these deficiencies can allow providers to determine appropriate preventative and intervention services for these students.

Academic. A legal expectation that students between the ages of 5 and 18 years are mandated to abide by is regular attendance at school (National Center for Education Statistics, 2017). In the United States, children and youth spend approximately 180 days per year at school and 6.8 hours per day at school. This equates to over 1,200 hours children and youth spend each year in a school setting. However, for children with chronic health conditions, doctors' appointments, hospitalization, or acute illnesses can make attendance at school difficult. Within a sample of 22,730 school-aged children grades 2-11, Crump and colleagues (2013) found that students with chronic health conditions missed more days of school than children without health adversities. Missing academic instruction is correlated with low academic achievement and high rates of college dropout (Balfanz & Byrnes, 2012).

Disparities in school performance also can be found when investigating differences in standardized scores and classroom grades between students with and without chronic health conditions. The literature on this topic indicates that students with chronic health conditions perform lower on mathematics and English language arts tests in comparison to students without health care needs (Crump et al., 2013; Quach, Nguyen, O'Connor, Wake, 2017). Additionally, in a study that explored 1,524 teachers' perceptions of reading, math, writing, numeracy, science, and social competencies of their students with chronic health conditions, the data revealed that teachers' perceived students with chronic health conditions as having lower skills in these domains in comparison to children without an illness (Hoffmann et al., 2018).

Although frequent absences are one plausible explanation for the lower academic performance among students with chronic health conditions, Levine (2002) postulates that if a student exhibits a weak skill there is likely one or more neurodevelopmental functions that are impeding its acquisition. According to Levine (2002), these functions are neurological because

they represent capabilities that reside in the brain, and they are developmental because they are deemed to increase in effectiveness over time and with new experiences. These eight neurodevelopmental functions are attention, temporal-sequential ordering, spatial ordering, memory, language, neuromotor functions, social cognition, and higher-order cognition (Levin, 2002). In a recent metanalysis that investigated the neurocognitive deficits in children with chronic health conditions, Compas, Jaser, Reeslund, Patel, and Yarboi (2017) reported deficits in attention, visual memory, verbal memory, information processing speed, and language, which impacted the academic achievement of students with leukemia (Campbell et al., 2007), brain tumors (Robinson et al., 2010), and diabetes (Karsdorp, Everaerd, Kindt, & Mulder, 2007). Scientists have reported that deficiencies in neurodevelopmental functions during childhood can have implications on outcomes in adulthood including a $2,000 to $6,000 reduction in salary for every 10-point decrease in IQ scores (Zagorsky, 2007) and a higher risk for unemployment (Compas et al., 2017).

Mental Health. In conjunction with medical and academic challenges that can impact children and youth with aversive medical challenges, their risk of co-morbid mental health disorders also is a cause for concern. Within a sample of 4,691,216 children and youth ages 1-18 years, Perrin, Asarnow, Stancin, Melek, and Fritz (2019) reported that over 16% of children with a chronic health condition had mental health challenges including substance abuse disorder, in comparison to less than 8% of participants without health needs. These results are similar to a cross-sectional study conducted by researcher Dr. Joan-Carles Suris. Suris and Parera (2005) investigated drug use among youth 14-19 years of age with and without chronic health conditions. Data revealed that although males with chronic health conditions showed similar rates of drug use as their healthy counterparts, females with chronic health conditions had higher

rates of every drug measured in the study (i.e., tobacco, alcohol, cannabis, cocaine, and synthetic drugs) compared to their heathy peers. Additional research has shown that students with chronic health conditions have elevated rates of self-harm, suicidal ideation, and suicide attempts in comparison to children without chronic health conditions. These rates are even higher for youth with comorbid medical and mental health disorders (Barnes, Eisenberg, and Resnick, 2010). In this regard, results in Barnes, Eisenberg, and Resnick (2010) found higher rates of self-harm in females with chronic health conditions as compared to their healthy peers, and they reported that the prevalence of self-harm, suicidal ideation, and attempted suicide increased as students' grade levels increased.

The findings from these studies indicate that, coupled with medical challenges, students with chronic health conditions may warrant services to address their academic and psychological functioning. The diverse challenges that students with chronic health conditions face do not occur in silos; instead, they are enmeshed and play a role in the students' overall functioning. As a result, an ecological approach for supporting the needs of students with chronic health conditions must be considered to ensure holistic assessment and treatment for these children and youth.

Impact of COVID-19 on Students with Chronic Health Conditions

The COVID-19 pandemic has disrupted the daily routine of children all around the world. Evidence-based research on the impact COVID-19 has on the functioning of children with chronic health conditions is pending. Still, researchers have speculated that the pandemic may have positive and negative implications on the well-being of this population. Serlachius, Badaway, and Thabrew (2020) described possible challenges for children with chronic health conditions during the pandemic. These included heightened health anxiety due to worries about

personal health, disrupted daily routines, limited communication with peers due to school closures, increased family stress, and reduced physical support from school providers and health care workers. When investigating specific pediatric populations, Sullivan et al. (2020) conducted a global study on children with cancer. They found preliminary evidence that parents are avoiding emergency rooms and medical assessments, which can interfere in treatment and create delayed identification of medical concerns. Another pediatric condition studied is ADHD. Researchers have speculated that possible hypothesized problems for children with ADHD include postponement of evaluations, delays in medication consultations, lack of school feedback, and increased family stress (McGrath, 2020). More recently, Breaux et al. (2021) surveyed 238 adolescents ages 15 – 17 years, during pre-COVID-19 (September 2018 – February 2020), during stay-at-home orders (May 15 – June 2020), and when orders were slightly lifted (July 1 – August 5, 2020). Among all adolescents, researchers discovered an increase in mental health symptoms from pre-COVID-19 to spring 2020 and decreased symptoms when the government lifted stay-at-home orders. Adolescents with ADHD exhibited increased inattention, hyperactivity, and oppositional/defiant symptoms across all time points. These data demonstrate the need for continued research on the impact of environmental stressors on the functioning of youth with ADHD.

Alongside challenges, researchers have identified possible opportunities that the pandemic will have on the well-being of youth with chronic health conditions. These include building resiliency skills, reduced academic stress due to home-learning and school closures, increased time with family, reduced access to drug substances, and access to health care technology (Serlachius, Badaway, & Thabrew, 2020). Over the next few years, researchers will know more information concerning the impact COVID-19 had on the well-being of children with

chronic health conditions. The current study sheds some light on school nurses' perspectives on the effect COVID-19 had on the functioning of their students.

Theoretical Frameworks

Two established frameworks will guide the design of the prospective study. The Participatory Intervention Model (PIM) developed by Nastasi (2000) is the first framework that will be discussed at length. This framework details the role key stakeholders have in engaging in culturally-sensitive practices in the development, implementation, and evaluation phases of service delivery. Bronfenbrenner's Ecological Model (1977) is the second framework that will be discussed, and it describes how different systems of the environment influence the functioning of a child.

Participatory Intervention Model. The Participatory Intervention Model (PIM; Nastasi, 2000), derived from the literature in participatory action research, promotes the involvement of relevant stakeholders throughout all stages of a research study, including planning, data collection, and data analysis (Bergold & Thomas, 2012). The consideration of culture is at the core of the PIM framework, and cultural-specific interventions "focus on competencies that are relevant to the target culture, make use of the language of the population in terms of meaning and vocabulary and reflect the values and beliefs of the members of the culture" (Nastasi et al., 2000, p. 208). Culture is incorporated throughout all stages of PIM which include: (1) participatory generation, (2) natural adaption, and (3) essential changes. Nastasi et al. (2000) theorizes that involving key stakeholders facilitates intervention ownership, empowerment, sustainability, and social change which are critical aspects for improving the outcomes of students with chronic health conditions.

Participatory generation involves key stakeholders collaborating to determine students' areas of concerns, and individual, environmental, and cultural factors that are contributing to the issues. Once data in these areas are collected, the team proceeds with identifying hypotheses for the student's current performance, goals, and intervention strategies that are sensitive to their cultural practices. Natural adaption entails monitoring a student's progress towards their goals and modifying noncritical aspects of an intervention to best align with the needs of a student. The modification of interventions involves monitoring treatment fidelity and the changes that were made to the intervention plan. The last phase in the PIM is essential changes. Evaluating the outcomes of the data is the core characteristic of this phase, and it allows stakeholders to determine the progress a student made towards their goals.

Developmental Ecological Model. Addressing the diverse needs of students with chronic health conditions requires knowledge of the different systems that interact in a child's environment and contributes to their overall functioning. One of the earliest frameworks for using an ecological approach for analyzing the factors that impact the well-being of children was developed by Bronfenbrenner (1977). Bronfenbrenner's model entails a multi-systematic approach that includes the child in the center and different levels of the environment that are theorized to impact children's development. The level closest to the center is the microsystem and encompasses the relationships that children have with individuals and organizations in their immediate surroundings. For children with chronic health conditions, this level may include parents, teachers, schools, and hospitals. Outside of the microsystem is the mesosystem, and this level involves the interactions between different elements in the microsystem. An example related to students with chronic health conditions is the collaboration between a parent and the school system to identify supports that can help a child be successful. Surrounding the

mesosystem is the exosystem, defined as social structures that the child does not directly participate in; however, they indirectly impact the well-being of a child. For instance, a child's parent's workplace is a part of the exosystem and its elements such as salary, paid-time-off, insurance policies, and personal sick days can have implications on the treatment and overall health of a child with a chronic health condition. The last system in Bronfenbrenner's model is the macrosystem, and this level involves the cultural and political practices that influence a child's well-being. Laws such as Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act (ADA), and Individuals with Disabilities Education Act (IDEA) have been passed to protect the rights of students with chronic health conditions by granting them access to general or specialized education, health-related services, and accommodations that allow them to remain in school and be successful (Cortiella & Boundy, 2018). Additionally, factors such as race, ethnicity, language, and socioeconomic status can influence the development of a child with a chronic health condition.

In summary, Bronfenbrenner's theory on ecological systems and the Participatory Intervention Model developed by Nastasi and colleagues (2000) serve as the theoretical frameworks for this study. Bronfenbrenner's model is pertinent to this study because it explores the how coordination across different systems contribute to children's functioning. Due to the range of services that students with chronic health conditions need, collaboration within and across systems is pertinent to their development. The PIM explains the importance of involving key stakeholders for supporting children and youth with chronic health conditions. According to this model, stakeholders are essential in all stages of treatment, including goal development, creation of an intervention plan, and evaluation of services. Nastasi et al. (2000) advocates that having these key stakeholders active in the process helps ensure the implementation of

culturally-sensitive practices, and promotes empowerment, ownership, and a sustainable system, all of which are necessary for improving the outcomes of pediatric youth. Though these systems are advantageous for detailing the importance of using an ecological and collaborative lens for serving students with chronic health conditions, it is unclear how professionals' perceptions and practices align with these frameworks. The goal of this study is to gain insight on these areas to learn more information about how providers, specifically school nurses, holistically serve students with chronic health conditions.

Key Stakeholders in Supporting Youth with Chronic Conditions in Schools

Family. Caretakers play a monumental role in supporting the educational outcomes of their child with a chronic health condition. The responsibilities they assume can include notifying schools of their child's diagnosis and health management needs, meeting with the school team to develop an individualized education plan, coordinating with school and medical providers to exchange appropriate information, discussing changes in medication or symptoms with school and medical providers, and supplying medical supplies (National Heath, Lung, and Blood Institute, 2002). Parent involvement also may include assisting their child with homework, voting in school board elections, advocating for change in school procedures and practices, or volunteering in a classroom (National Education Association, 2009). It is important to recognize that there are cultural barriers that impact the extent to which families are involved in the educational setting. For instance, limited understanding of English can be a barrier for Latino families which can inhibit their ability to express their child's needs or understand feedback from educators (Delgado-Gaitan, 2004). Additionally, for low socioeconomic status families, access to transportation and inflexible job schedules can inhibit families' ability to attend functions at their child's school (Caplan, 2000). Across different minority groups, families may also lack an

understanding of the role they have in their child's education (Delgado-Gaitan, 2004; Caplan 2000). In essence, families may possess different viewpoints of what parent involvement looks like, which may also differ from a school's expectation. Understanding the unique facilitators and barriers of families' contributions to serving youth with chronic health conditions may inform the allocation of appropriate resources.

Pediatrician. Primary care pediatricians are typically parents' first point of contact when they are seeking general health services. Families can access a pediatrician through family referrals, community services, and other trusted doctors. Pediatricians can provide a wealth of services such as routine checkups, preventive health care, diagnosis, and treatment of chronic health conditions (American Academy of Pediatrics, 2015). The training pediatricians receive in immunology, child development, social and environmental influences, and anatomy makes them well suited to help improve the health of children. Additionally, the American Academy of Pediatrics has advocated for physicians to become more aware of the educational system, and knowledgeable of their role in the implementation of services for children with diverse medical needs. Consequently, pediatricians have been recognized as having the competency to take an active role in the schools and engage in interdisciplinary decision-making regarding services for students with chronic medical conditions.

Principal. As instructional leaders, principals play a pivotal role in the creation and sustainability of innovation and change in a school setting (Nunnelley, Whaley, Mull, & Hott, 2003). According to Habegger (2008), a principal's ability to foster a positive school culture can allow for improvement in the educational setting. Promoting a positive school culture involves creating a sense of belonging and providing a clear direction for students, teachers, parents, and community members (Habegger, 2008). Many actions can be taken by principals to support

students with chronic health conditions such as establishing multidisciplinary teams to develop policies and procedures for supporting students with chronic conditions to ensure the school is acting in accordance to health laws; supporting and partnering with parents; collaborating with community partners and coordinating effective communication tools to share and gain information; developing individualized education plans that align with the needs of a student; providing professional development opportunities to staff to build their capacity in students' medical conditions, treatment plans, and possible side effects to illness or medications; implementing practices to support the social-emotional needs of students; and have a grief and bereavement plan for the student body and faculty (Shaw, Glaser, Stern, Sferdenschi, & McCabe, 2010).

Teachers. Teachers provide students with chronic health conditions the tools and opportunities to succeed in the classroom (Hamlet & Herrick, 2011). Due to the high prevalence of chronic health conditions within the pediatric population, it is theorized that every teacher will have interactions with a student with a chronic illness at some point in his or her career (Clay, Cortina, Harper, Cocco, & Drotar, 2004). The duties of teachers to support students with chronic health conditions may include developing and implementing accommodations and interventions, progress monitoring students' outcomes, communicating with families, setting and reinforcing behavioral expectations, and providing small group and individualized support to students who require more intensive services (Hamlet & Herrick, 2011).

School Psychologist. The diverse roles of school psychologists' make them valuable stakeholders in addressing the needs of students with chronic health conditions. According to the American Psychological Association (2019), school psychologists possess skills in assessment, intervention, prevention, and evaluation procedures which are beneficial in identifying students

in need of services, developing and implementing interventions that align with the needs, and evaluating the outcomes of these intervention efforts. School psychologists' knowledge in childhood development, mental health, and academics allows them to identify and intervene in issues that pediatric students may face (Barraclough & Machek, 2010). Barraclough and Machek (2012) surveyed 297 school psychologists' inquiring about their roles in serving students with chronic diseases, and over 50% of the respondents reported being involved in assessing instructional level (80.4%), working with school personnel to help with understanding chronic health conditions (71.0%), discussing medication side effects with school personnel (68.7%), coordinating other health impairment plans (66%), coordinating 504 plans (65.9%), working with parents to help them understand chronic illnesses (58.9%), discussing medication side effects with parents (58.8%), working with a member of the child's medical team (58.6%), assisting with transition plans (54.7%) and developing school reentry plans (54.4%). Overall, school psychologists can perform many duties across systems of care to support students with chronic health conditions.

School Nurse. School nurses serve as the leaders in providing school-based health-related services to students with chronic illnesses (Academy of Pediatrics, Committee on School Health, 2001). The roles of school nurses within the school setting can include conducting screenings, communicating with physicians, consulting with parents, providing school-based health services, developing health plans, promoting healthy school environments, and evaluating health policies (Magalnick & Mazyck, 2008). Additionally, it is theorized that school nurses contribute to the long-term health of students with chronic health conditions by coordinating care between families, the educational system, healthcare systems, and community agencies (McClanahan & Weismuller, 2015). By helping pediatric populations in the school setting,

school nurses contribute to, "risk reduction, increased classroom seat time, decreased student absenteeism, improved academic success, and cost savings to families and educational and healthcare systems" (National Association of School Nurses, 2017, p. 2). The relationships school nurses have with other education personnel within the school system, as well as with professionals outside of the school system, also can contribute to improving the diverse needs of students with chronic health conditions. For instance, school nurses can collaborate with teachers to develop health curriculum or with cafeteria staff to review nutritional education and establish school-wide wellness goals (Ladd, 2009). Due to the integral role of school nurses in serving children and youth with chronic illnesses, this study will focus on collecting school nurses' attitudes and practices collaborating with key stakeholders for serving youth with chronic health conditions.

School Nurses' Experiences Working in an Ecological System

A handful of studies have investigated school nurses' experiences and attitudes working in an ecological system to develop, implement, and evaluate services in school for students with chronic health conditions. This section will detail the current literature regarding school nurses' perceptions of pertinent key stakeholders and institutions involved in the prosperity of students with chronic health conditions; their experiences collaborating with these partners to support this population of students; their knowledge of factors external to the child's immediate environment that contributes to the functioning of students with chronic health conditions; and political and cultural factors that influence their practices for serving pediatric youth. This information will be organized using the constructs in Bronfenbrenner's Developmental Ecological Model (1997) described previously.

***Key Stakeholders*.** School nurses' perceptions of the individuals and organizations that contribute to the well-being of children and youth with chronic health conditions have been minimally investigated. Regarding the individuals that contribute to the development of pediatric youth, school nurses appear self-aware of their role in supporting youth with chronic illnesses. When asked about serving students with obesity, Moyers, Bugle, and Jackson (2005) found that the majority of school nurses in a sample of 106 agreed or strongly agreed that their role in serving children with childhood obesity includes being a role model to others by maintaining a normal weight and recommending weight loss treatment options to parents who ask for help. Concerning school nurses' comfortability working with students with chronic health conditions, research has indicated that their confidence may be dependent on the specific condition and need. For instance, Brown, Looman, and Garwick (2019) found in a sample of 97 school nurses, participants felt more comfortable addressing asthmatic symptoms in comparison to ADHD. Furthermore, Terry, Patel, Cohen, Scherzer, and Kline (2016) found high levels of confidence among 83 school nurses in Ohio with identifying seizures (98%), handling a prolonged seizure (89%), giving oral medication to stops seizures (84%), but fewer school nurses felt confident handling cluster seizures (67%), providing injections to control a seizure (63%), or using a magnetic apparatus to stop a seizure (47%).

Other individuals who contribute to the functioning of students with chronic health conditions cited by school nurses include nursing assistants, secretaries, teachers, primary care providers (Baker, Hebbeler, Davis-Alldritt, Anderson, & Knauer, 2015), and school psychologists (Singleton, 2019). Baker et al., (2015) surveyed 446 practicing California school nurses to explore their perceptions of personnel that provide direct services to students with health care needs. The results concluded that medical procedures commonly performed by

school staff other than the school nurse (i.e., include nursing assistants, secretaries, and teachers) include blood sugar testing, catheterization, gastrostomy feeding and care, inhaler medication, oral medication, rectal medication, ostomy care, oxygen administration, suctioning, and ventilator care. Additionally, in Singleton (2019), 143 school nurses out of a sample of 234 perceived school psychologists as being very beneficial for serving youth with chronic health conditions. These results provide evidence of the various key stakeholders school nurses' believe contribute to the needs of students with chronic health conditions.

When asked about the organizations that are pertinent in supporting youth, the school system is commonly cited as being integral in assisting the pediatric population. Nurses in Moyers, Bugle, and Jackson's (2005) study believed comprehensive health curricula on nutrition and weight control should be accessible at all schools (N = 106; 93%), schools should limit junk food machines (98%) and offer special low-calorie lunches (77%), schools should offer on-site weight control treatment programs for students (54%), and physical education classes should be available for all students (66%). Concerning the resources available in schools to help provide services to youth with chronic illnesses, interviews with 13 school nurses in Kruger, Radjenovic, Toker, and Comeaux, (2009) revealed that their offices were equipped with a desk, sink, locked medication cabinet, and restroom access; however, cots, oxygen tanks, pulse oximeters, blood pressure equipment, disposable gloves, computers, and access to the internet were not readily available. These nurses voiced that the school budget did not include medical supplies making them reliant on "donations from families, begging from equipment vendors, bartering among other schools, and personally subsidizing items such as nonprescription medications, topical creams and ointments, bandages, catheters, and even oxygen" (Kruger et al., p. 440). These findings suggest that school nurses perceive the school setting as being a monumental institution

for supporting youth with chronic conditions, but more resources are needed to support their practices.

Collaboration with Stakeholders. Minimal studies have investigated school nurses' collaboration with different stakeholders to develop, implement, and evaluate services for students with chronic health conditions. Brown, Looman, and Garwick (2019) explored the manner in which 97 school nurses employed in Minnesota elementary schools established relationships with families who have a child with asthma or ADHD. The data revealed that nurses with a graduate degree reported more comfort initiating involvement with families of children with asthma, and greater skills working with families of children with both asthma and ADHD. In a secondary study, a nurse in the Kruger et al. (2009) study shared her experiences working with a family to care for a child with diabetes and voiced engagement in an array of collaborative practices including consultation with parents and physicians, providing psychoeducation to staff regarding diabetes, and conferring with cafeteria employees to improve nutrition. Though collaborating with families can be beneficial in the delivery of services, nurses may face challenges when attempting to establish these relationships. For instance, nurses in Smith and Firmin (2009) reported that barriers to collaborating with families included not having parent's contact information, parent's limited transportation, and parents not agreeing with the school nurses' medical opinions. Recognizing the facilitators and barriers in collaborating with parents can provide educators with areas to target for enhancing family-school partnerships.

School nurses' collaborative efforts with primary care providers has also been studied. Baker et al., (2015) concluded that though school nurses perceived communicating with a child's health care provider as beneficial to improving care, approximately 60% of school nurses in a sample of 446 did not have a release of information form completed by families to grant

permission to interact with student's primary or mental health care provider. Baker et al. (2015) reported that the most common reason why school nurses lacked this permission was due to the school not asking the parents for release forms. Additional barriers reported were parents refusing permission (48%); nurses had limited time to follow up with the family to gain permission (26%); and language or cultural barriers (20%). Other studies also have found that school nurses think trying to collaborate with primary care providers is difficult, resulting to it occurring infrequently (Kruger et al., 2009). Instead, contacting a pediatric specialist has been identified as a more feasible way for requesting information about a student due to them being more responsive (Kruger et al., 2009).

Most recently, school nurses' perceptions of their interactions with school psychologists has been studied. Singleton (2019) conducted a national study to explore school nurses' collaborative practices with school psychologists, and among a sample of 234 respondents, 85% of the school nurses perceived collaboration with school psychologists as being very beneficial (n = 143; 61%) or beneficial (n = 56; 24%) to the health of students with chronic health conditions. Though school nurses acknowledged the value of collaborating with school psychologists, the majority of respondents reported a low frequency of collaboration with school psychologists. More specifically, over half of the school nurses in Singleton (2019) reported collaborating with school psychologists a few times a year, less than a few times a year, or never.

Information from these studies suggest that school nurses understand the value of collaborating with an array of professionals to support students with chronic health conditions. However, there are barriers that inhibit the extent to which they are able to engage in collaborative practices. School personnel's limited understanding of the roles and responsibilities of a school nurse is one barrier that has been reported as impeding in the collaborative process

(Kruger et al., 2009). Nurses in the Kruger et al. (2009) study reported that the principal at their school asked them to perform duties that did not align with their profession including calling fire drills and monitoring workmen's compensation; however, they were not granted permission to complete activities that aligned with their functions including being involved in Individualized Education Planning (IEP) meetings. Similar findings were reported in Singleton (2019), in which some school nurses indicated that school psychologists did not understand their roles when working with the pediatric population. Additional barriers that have been cited by school nurses are the inability to access professionals and limited time (Kruger et al., 2009; Singleton, 2019). Learning school nurses' experiences interacting with key stakeholders in the home, school, community, and medical environments can shed light on their collaborative practices working in an ecological system.

Gaps in the Literature

Evident in the previous section, there has been research on school nurses' perceptions and practices working in an ecological system to serve youth with chronic illnesses. Though the current literature is valuable in describing school nurses' experiences, there are some areas that still warrant investigation. First, no current published studies have investigated nurses' perceptions of the academic and psychological strengths and deficits of students with chronic health conditions. Understanding providers' awareness of the strengths and challenges of students with chronic health conditions can be informational when investigating their interdisciplinary collaboration. Secondly, demographic characteristics of school nurses can heavily influence their experiences collaborating to serve pediatric youth. For instance, in Smith and Firmin (2009), school nurses were employed in an urban area, and they reported the value of collaborating with community agencies. However, the availability of community agencies in

rural areas may be scarce. Hence, school nurses employed in these areas may hold different perceptions regarding the value of community agencies. Moreover, many current studies on this topic were focused on specific chronic health conditions as opposed to school nurses' perceptions serving all students with chronic health conditions (Brown et al., 2019; Terry et al., 2016; Moyers et al., 2005). Though chronic health conditions may present unique medical challenges, there are similarities in treatment regimens (i.e., healthy eating) and academic, behavioral, and social-emotional supports that can allow for the implementation of school-wide practices to promote educational success. Furthermore, many studies focused on school nurses' practices and opinions as they relate to the school system and neglected to investigate additional institutes that contribute to the functioning of youth with chronic health conditions. Learning more about school nurses' experiences working with medical and community institutions can shed light on the relationships nurses can have with different providers to serve their students. Additionally, there have been no studies to date that have provided a clear explanation of how school nurses collaborate with stakeholders to develop, implement, and evaluate services for students with chronic health conditions. Lastly, many studies cited in this literature review have been quantitative in nature which prohibits an in-depth understanding of the experiences of school nurses. Using qualitative procedures provides school nurses with the freedom and flexibility to be descriptive of their experiences.

Purpose of this Study

Although the current literature has been valuable in providing a preliminary understanding of school nurses' experiences working in a multi-systematic society to support students with chronic health conditions, there are areas that are still in need of exploration. The current study was designed to learn about school nurses' practices and perceptions working in an

ecological system to develop, implement, and evaluate services for students with chronic health conditions. This study provides information about school nurses' perceptions of the impact chronic health conditions have on students' academic and psychological well-being, the roles and responsibilities of key stakeholders and organizations that contribute to pediatric youth; and nurses' collaborative practices with the stakeholders and organizations that serve youth with diverse health care needs.

Chapter Three: Method

To address the research questions posed for this study, interviews were conducted with school nurses to understand their experiences working in an ecological system to support children and youth with chronic health conditions. This chapter begins with an introduction to the research paradigm used in this study. Following this description, I provide details regarding the participants, instrumentation, data analysis, and ethical considerations that guided the study.

Research Paradigm

A research paradigm is a set of assumptions about the world and how it's examined. Research paradigms are composed of ontological, epistemological, and methodological assumptions that take a position on reality, what truth means, and how data are collected and analyzed (Scotland, 2012). I adopted a post-positivist ontological and epistemological style in the current study and a romanticist interviewing style. Post-positivism posits a true reality, but it can only be measured imperfectly (Ponterotto, 2005). Furthermore, there is an assumption that a researcher's stance can influence the study; thus, guidelines are necessary to control biases and facilitate the research process. The ultimate goal of a positivistic inquiry is to generate an explanation that can predict a phenomenon. This paradigm aligned with the current study because it attempted to understand the commonalities amongst school nurses who frequently collaborate to understand effective practices that educators can implement to serve youth with chronic health conditions.

Romantic Interviewing Style

Embracing a theoretical typology for qualitative interviewing can allow researchers to explore possible research questions, methodological approaches, and procedures for ensuring the quality of research (Roulston, 2010a). In that regard, I conducted the interviews in this study with a romantic interviewing style. An interview that uses a romantic framework has interview questions that explore participants' beliefs, perspectives, opinions, and attitudes about a specific topic (Roulston, 2010). A secondary consideration when using a romantic interviewing style is the interviewer's ability to establish rapport with participants and maintain a genuine and trusting relationship (Roulston, 2010a). Establishing an honest relationship with the participant involves being friendly, answering questions honestly, and using practical interpersonal skills that include asking open-ended questions, summarizing, and paraphrasing information. This communication helped nurses feel heard and respected as I gained an understanding of their lived experiences.

Recruitment

A convenience sampling, multi-step procedure was used for recruitment in this study. I first recruited school nurses from my thesis study, that I defended in February 2019. In my thesis, 240 school nurses recruited nationally completed a 45-item survey related to their communication and collaboration with school psychologists. At the end of the study, school nurses provided their contact information if they were interested in being involved in additional research. A total of 74 school nurses from the national survey provided their email addresses or phone number. I sent an email containing a description of the survey, a summary of my thesis findings, and an embedded link to access the Qualtrics survey to each school nurse on July 15, 2020. Of the 74 emails, seven returned as invalid, and five returned with an automatic vacation notice, which resulted in 62 emails successfully sent. The first recruitment procedure yielded a

response rate of 14.5%, which is equivalent to nine completed demographic questionnaires; five participants met the eligibility criteria for this study as defined below. Four school nurses did not meet eligibility because they were employed as district coordinators and did not have direct contact with students in a school setting.

I implemented a second convenience-sampling recruitment strategy in September 2020 to increase the study's sample size. For this method, I contacted former colleagues, supervisors, and family members to ask if they were aware of school nurses interested in participating in the study. My inclusion/exclusion criteria remained the same (e.g., must be employed in a school and endorse frequent collaboration). This procedure helped me acquire five additional participants for the study.

Inclusion Criteria

1. Individuals must identify as a school nurse and be employed in a school setting.
2. Individuals must endorse frequent collaboration. Frequent collaboration is defined as a school nurse interacting with a key stakeholder to plan and problem-solve for a student with a chronic health condition once a month, once a week, or more than once a week. This definition is consistent with what was used in the original study.

Participants

Participant Descriptions. Ten school nurses participated in this study, with —the majority of this sample identifying as female (80%) and White (70%). Concerning the age of the participants, most were between the ages of 26-34 years (40%), followed by 55-65 years (30%), over 65 years (20%), and 45-55 years (10%). Most of the participants had a Bachelor of Science in Nursing (54%). These school nurse participants were employed in the following regions:

Midwest, Northeast, Southeast, and Southwest. Participant demographic information is presented in Table 1.

School Descriptions. Information was collected on the school nurses' schools. Most school nurses had primary placements in elementary schools (70%), followed by high schools (20%) and middle schools (10%). Alongside their primary placements, three school nurses had an additional school placement. Most school nurses were employed in urban settings (50%), and others worked in suburban (40%) and rural (20%) schools (see Table 1).

Saturation. I met saturation after completing ten interviews, which aligns with previous research on this topic. According to Tracy (2019), a researcher can reach saturation after conducting 10 -12 interviews if the sample's homogeneity, knowledge of the subject, and the interview structure are considered. Regarding the homogeneity of the sample, Tracy (2019) states that fewer interviews are needed when there is a narrow sampling criterion. My sample in this study was moderately homogenous. Though the participants varied in personal and professional demographics, they were all school nurses employed in a school setting who exhibited frequent collaboration with pertinent stakeholders, specifically children with chronic health conditions. Relative to how knowledgeable the participants were about the topic area, Tracy (2019) reports that the more well-known a topic is, the fewer interviews needed to reach saturation. In the study, each interview question elicited nurses' attitudes and opinions regarding the subject. The questions did not require school nurses to generate responses outside of their lived experiences or beliefs, and all appeared well-versed in the topic. According to Tracy (2019), the final consideration is the interview structure – projects that use a standard interview guide across participants and with 'what' guiding research questions require fewer participants.

This criterion is relevant in the current study, as evidenced by the interview guide listed in Appendix D.

Table 1

Participant Demographics

Participant Pseudonym	Gender	Age (years)	Race Ethnicity	Highest Degree	Years as a School Nurse	Geographic Region	Level of School	Grades Served	Community Setting
Ava	Female	> 65	White	MS	20	Midwest	Elementary* Middle High	PreK-12	Suburban
Bella	Female	55-65	White Hispanic	BSN	30	Southwest	High	9-12	Urban
Charlotte	Female	45-54	White	BSN	21	Southeast	Elementary* Middle High	PreK - 12	Rural Suburban
Dylan	Female	55-65	White	FNP & MEd	24	Northeast	Elementary	K-5	Suburban
Ethan	Male	26-34	Black	BSN	2	Northeast	Middle	6-8	Urban
Florence	Female	26-34	Black	BSN	3	Northeast	High	9-12	Urban
Gabriella	Female	55-65	White	BSN	4	Midwest	Elementary	PreK-4	Urban
Holly	Female	26-34	Black	AS	5	Midwest	Elementary	PreK-5	Urban
Isla	Female	> 65	White	BSN	10	Southeast	Elementary* High	PreK –5; 9-12	Suburban
Jaden	Male	26-34	White	BSN	2	Southeast	Elementary	6-8	Rural

Note: MS = Master's Degree; BSN = Bachelor of Science in Nursing; FNP = Family Nurse Practitioner; MEd = Master of Education; AS = Associate Degree. For school nurses employed in multiple schools, an asterisk (*) represents their primary placement.

Data Collection

Demographic Survey. I created and distributed a demographic survey to all prospective participants to allow for a sample that varied in demographic characteristics. The survey consisted of 13-items that elicited information about the school nurses' gender, age, race, state of employment, highest education level, frequency of collaboration, and characteristics of the school in which they are employed. The nurse's collaborative practices frequency was the most pertinent variable because I was interested in understanding school nurses' practices collaborating in an ecological system, so the sample needed to consist of school nurses who regularly participated in interprofessional collaboration as part of their service delivery approach.

Interviews. I created an interview guide to facilitate the conversation with the school nurses. The interview questions were piloted virtually with an experienced school nurse, and I revised questions based on the pilot interview outcome. The final interview guide included eight questions that elicited school nurses' perceptions and attitudes regarding collaborating in an ecological system to support the needs of children with chronic health conditions. I used the same protocol with each of the school nurses (Ponterotto, 2005). The length of the interviews varied between 45 minutes and one hour. The first interview in this study was conducted in July 2020, and the last interview was conducted in November 2020.

Most interviews with the school nurses were conducted using video conferencing software or cellphone. According to Lo Iacona, Symonds, and Brown (2016), using videoconferencing technologies such as Skype can present many advantages. First, with videoconferencing, researchers can transcend geographical boundaries by eliminating the need to travel long distances for an interview. In the current study, I had a geographically diverse sample, making the use of video conferencing highly beneficial. Another benefit of using

videoconferencing is it allowed me to record nonverbal facial expressions. Capturing paralinguistic features provided additional meaning to the school nurses' spoken words. Though there are some advantages to using videoconferencing, it is a method that may be uncomfortable to some participants. Seitz (2016) reported that participants might be hesitant to provide in-depth responses to personal topics due to being on camera. Furthermore, completing interviews via videoconferencing required school nurses to have access to a webcam and stable internet connection, and these resources were not available to all participants. For the current study, seven school nurses completed the interview via videoconferencing, one telephone, and two in-person. All interviews completed via videoconferencing were recorded with video and audio as planned. I recorded one in-person interview and a telephone interview with audio. I conducted the second in-person interview without recording video or audio due to difficulties accessing the school internet to record the audio.

Each interview began with an explanation of the purpose of the study and a description of why I was interested in this research area. Following introductory details, school nurses were encouraged to share why they became interested in their career and their current school placement role. Then, they answered questions related to the impact chronic health conditions have on students' educational and psychological outcomes, their perception of stakeholders pertinent to children's development, and their experiences collaborating with these stakeholders. I asked all questions in an open-ended format to encourage school nurses to provide detailed responses. School nurses were asked all questions in the interview guide at a minimum; however, I asked additional questions to clarify their life stories. The interview concluded with closing remarks that thanked school nurses for their cooperation. School nurses received a $25 gift card

to Amazon for their participation in the study. A copy of the interview guide is provided in Appendix D.

Data Analysis

Transcriptions were completed using a 'simple' form, including notating and transforming the participant's words into punctuated sentences (Roulston, 2010b). I inserted my comments regarding the interview process in the margins of each transcription. Comments included sentiments that I found exciting and feedback on my interpersonal communication skills. These comments allowed me to reflect on my interactions with the data.

Thematic analysis procedures endorsed by Braun and Clarke (2008) were used to identify, analyze, and report patterns in the data. Deductive and inductive approaches for identifying themes were conducted in this study. According to Braun and Clarke (2008), a deductive approach is driven by research theories. For example, in Singleton (2019), school nurses perceived school psychologists as valuable stakeholders for supporting youth with chronic health conditions. Therefore, *psychologist* is an example of a code that was used when I completed deductive coding. Based on the literature detailed in Chapter 2, additional deductive codes were *social worker, counselor, teacher, principal, administrator, parent,* and *doctor*. An inductive approach does not align with a pre-existing framework; instead, it is informed by the data. Chapter 4 describes the data analysis approach used for each research question.

The development of the themes entailed the following six-step procedure described by Braun and Clarke (2008): (1) familiarize yourself with your data (i.e., transcribe interviews and record initial codes); (2) generate initial codes (i.e., systematically collect evidence for each code); (3) search for themes (i.e., organize codes into potential themes); (4) review themes (i.e., review the codes for each theme and see if there are patterns, re-read transcripts to analyze how

they apply to the themes); (5) define and name themes (i.e., provide clear definitions and names for the themes); (6) produce the report (i.e., identify vivid and clear excerpts of each theme to include in the report that accurately depicts the data).

The last core component of data analysis involved investigating the reliability of the codes. Assessing this involved me partnering with an advanced school psychology doctoral student with qualitative experience to code each of the transcripts according to the research questions. Cohen's kappa was used to measure the interrater agreement of codes between myself and my colleague. The Cohen's kappa was 0.81, which suggests an appropriate agreement (Landis & Koch, 1997).

Quality Criteria

A variety of methods were employed to secure the dependability and criteria of the data. Throughout the project, I frequently referred to Tracy (2010) and her eight key markers for ensuring the quality of this qualitative study. The current study used the criteria of (a) worthy topic, (b) sincerity, and (c) ethics. This study includes a worthy topic because interprofessional collaboration is timely, relevant, and significant in school psychology (Power & Bradley-Klug, 2013). Most recently, given the global impact of the Coronavirus Disease 2019 (COVID-19), stakeholders' need to collaborate is even more pertinent given the impact the pandemic has had on the physical, social-emotional, behavioral, and academic outcomes of students and their families. Related to health, children and adolescents with chronic conditions are at risk of contracting a severe illness from COVID-19 and developing Multisystem Inflammatory Syndrome (CDC, 2021). Additionally, worldwide, schools had to decide how instruction was to be delivered (e.g., entirely in-person, hybrid model, remote learning), which had implications on promoting behaviors that reduce COVID-19's spread while maintaining safe and healthy

environments, and the educational performance of children. Interprofessional collaboration is monumental as schools try to navigate this pandemic, thus increasing this study's timeliness.

Sincerity, which includes self-reflexivity and transparency, was integrated into this study. Concerning self-reflexivity, at the beginning of this study, I inspected how my values and life experiences related to this research and my biases regarding interprofessional collaboration. Additionally, during the data collection and analysis phases, I used a journal to record my thoughts and feelings regarding my interactions with the participants and how my presentation during the interview and the methods I implemented impacted the collected data. Using these procedures allowed me to become more attentive to my role in the research process.

By virtue of this study being qualitative, different ethical issues were considered and addressed to protect the study's integrity. The ethical principles pertinent in this study included procedural and relational ethics (Tracy, 2010). Procedural ethics pertains to ethical actions that are required by an organization or institutional review board. These requirements include do no harm, avoid deception, informed consent, and privacy and confidentiality. In the current study, before recruiting participants, I obtained approval to conduct the research from the Institutional Review (IRB) at the University of South Florida (USF). This study was considered a minimal risk to school nurses who decided to participate. Before participating in the interview, school nurses received an informed consent form detailing information regarding the study's purpose, procedures for data collection and analysis, a list of individuals who would have access to the data, and information on how they could opt-out of participation. Respecting participants' autonomy is integral in research studies, and I informed each school nurse that participation in the study was voluntary. School nurses had the right to accept or refuse participation in the study (Orb, Eisenhauer, & Wynaden, 2000). Protecting the confidentiality and privacy of the school

nurses is another procedural ethical issue that was addressed. Although the information collected was based on the school nurses' lived experiences, all participants had the right to confidentiality, and their identities were protected. Consequently, I replaced all identifying information with pseudonyms (i.e., the specific organization a school nurse collaborates with will not be shared). Furthermore, once my dissertation has been finalized by the Electronic Thesis & Dissertation Resource Center at USF, all audio recordings will be destroyed.

Relational ethics emphasizes recognizing the respect, dignity, and connectedness between the researcher and individuals or communities they are researching (Ellis, 2007). It entails that I am aware of my role as a researcher, the relationships that I am forming, and that I treat nurses as whole people instead of subjects from which I desire to gain a good story (Tracy, 2019). To accomplish this, I honored the school nurses' preferences for the interview format used and the time when the interviews were scheduled, performed all tasks listed in the consent form, and prioritized the school nurses' interests over my research (Christians, 2011). By utilizing the measures that I have discussed within this chapter, I am confident that I implemented practices that balanced the project's needs with the rights of the participants throughout all stages of this research project.

Reflexivity Statement

Producing this reflexive statement allows me to deeply consider how my personal and professional beliefs shape my perspectives and worldview. A core belief I hold in reference to this project includes my biases toward an ecological approach to children's development. I think children are more successful when they have a network of individuals and resources that could help advance their well-being. This belief stems from my childhood experiences, where my family values the proverb "*it takes a village to raise a child."* In my upbringing, I had a village -

which consisted of a team of family, friends, school professionals, and community leaders that helped ensure I was happy, safe, and successful. I advocate for an ecological approach to supporting children because children are not born with the skills and resources to prosper. They require support, education, and guidance from others to help advance their well-being.

My graduate training and clinical experiences in school psychology reinforced my beliefs that children can thrive when interacting in a positive, healthy, and enriching environment. Through my school curriculum, I learned about different frameworks, including Bronfenbrenner's Developmental Ecological Model (1977) and the Participatory Intervention Model (2000), which mirror my philosophy on childhood development. Like Bronfenbrenner, I believe children interact in an ecological environment, and some people and institutions contribute to their functioning. Additionally, the Participatory Intervention Model resonates with me because I think the inclusion of stakeholders in service delivery can be monumental in enhancing youth's outcomes.

I see these theories as valuable for all children, but they are especially critical for children with chronic health conditions. Youth with pediatric illnesses face a range of medical, academic, and psychological challenges. I care about using ecological frameworks to address the diverse needs of children with chronic health conditions because, without it, it is harder for them to succeed. I believe that all children with chronic health conditions can have a village that cares about their prosperity, and my clinical and research passions center around trying to investigate how to create these villages. I am interested in investigating how schools can contribute to the formation of these villages because children spend a significant amount of their lives interacting in the educational setting. My dissertation focuses on the practices and perspectives of school

nurses because of their reputation as being the leaders in supporting youth with chronic health conditions at school.

During the interviews with the school nurses, I found myself fascinated by their stories and connecting to their viewpoints. I established phenomenal rapport with the school nurses and even developed plans with some to help them with their projects after my dissertation. While collecting data, I began perceiving these school nurses as being a part of my village, because they were helping me complete a large academic milestone – my dissertation, all while facing a pandemic. I addressed these feelings, and potential biases, by having a consensual coder who reviewed the transcripts, identified codes, and compared themes with me. Ultimately, I believe each school nurse in this study has unique experiences that allow them to collaborate effectively with students, and I hope others can use the information from this study to advance the collaborative practices in their educational communities.

Chapter Four: Findings

This chapter presents the study findings under each research question. I analyzed the following information through a post-positivist lens; hence, the results represent an imperfect "true" reality. Consistent with a post-positivist paradigm, the findings use direct quotes from the participants and the perception I derived from the school nurses' experiences. I used the Braun and Clarke (2008) framework for conducting a thematic analysis to help me identify my codes and themes. To help me understand and organize my data, I made three copies of each transcript, dedicated each transcript to one of my three research questions, and applied the Braun and Clarke (2008) model for each research question, starting with question one. Using this structure provided me with focus and clarity as I aimed to understand each school nurse's lived experiences and answer my research questions. The research questions organize the following sections.

Question 1: What are school nurses' perceptions of the impact chronic health conditions have on students' academic and psychological well-being?

Inductive coding was used to examine how school nurses described the impact of chronic health conditions on students' well-being, aligning with questions four and five listed on the Interview Guide (Appendix D). Below are the findings I derived from the school nurses' responses.

Academic Performance.

Eight of the school nurses described academic outcomes as dependent on how well students' symptoms are managed. Ava, Bella, Charlotte, and Dylan explicitly stated academic performance is related to managing symptoms. Other school nurses used terms including "brand new" vs. "adjusted," "out of control," vs. "controlled," and "regulated" vs. "not managed" to explain symptom differences that exist between students. School nurses specified factors that contribute to managing symptoms, including parent involvement and access to medical care. Concerning parent involvement, nurses emphasized how adequate parent engagement can help children in school. Jaden reported:

> Having parents involved in the care is just beneficial for the children. They know what is going on with the child. They know what is going on in the school, the supports we provide, and how they can help. Parents are the rock for the kids and having them involved as much as possible is essential.

Dylan classified parents as the 'experts' when deciding what the child needs and stated that having parents involved in the medical and educational process helps ensure the school is aware of the child's concerns, these concerns are being addressed, the school is not overstepping its boundaries, and educators are being held accountable for supporting their child.

Nurses also explained how limited parent involvement could contribute to low regulation of symptoms. For instance, Florence responded:

> These children grow up fast and often assume a lot of responsibilities at home – they take care of the house, siblings, and themselves while the parent works and provides for the family. Parents take them to doctor's appointments, but after that, the kids are expected to adhere to their responsibilities. Sometimes children can be successful with following their

> treatment, but others need that supervision and check-ins, and they aren't receiving that at home, and they are more often sick, and it impacts school.

Charlotte revealed her perspective on how society is shaping parents into not having limited involvement by stating:

> I feel that we are turning into a society where nobody's responsible for anything, and what I mean by that is that we have school-based health clinics in all of our schools, and then we have mobile dentistry that comes into our schools. I feel that we aren't making the parents responsible for their children because they can get absolutely everything, they need through the school system. Parents do not learn how to take care of their children on their own and schools cannot stay on top of everything.

She later reported:

> I have a student who is literally rotting out of the mouth, and the mobile dentist is going to come and take care of them, but that is a CPS [Child Protective Services] call, and the child's symptoms cause him to be poor in school.

Participants also judged health insurance to be a key element in how well a child's symptoms are managed. Access to medical care primarily entailed the availability of health insurance and medication. Holly shared how health insurance can facilitate academic success by stating:

> Having access to healthcare is intricately linked to children's health outcomes. I know children enrolled in some form of health insurance, whether through the Children's Health Insurance Program or private health insurance, over the long-term have higher standardized test scores and high school graduation rates. These outcomes are in turn linked to future employment rates and average salary. Insurance enrollment and access

> to quality health care are such important determinants for helping children succeed in their classes, and it is something I try to support families in pursuing.

Ava referred to a lack of health insurance being an underlining reason for why students with chronic health conditions struggle with meeting academic benchmarks when she said:

> I had one student who did not have health insurance, and this was before the Affordable Care Act, but she did not have health insurance. The mother had Type 2 Diabetes - she was diagnosed with this in high school, and they decided to just control it like mom did with her Type 2, and she ran into a lot of difficulties. She didn't have health insurance, and insulin is expensive, so she struggled with her symptoms and in school a lot academically.

A form of insurance that is sometimes overlooked is vision insurance. Ethan shared his experiences meeting the needs of a student with vision difficulties and said:

> One of my students this year has comorbid anaphylaxis and vision challenges. The family does not have vision insurance, and school was hard for him because his asthma was out of control and he could not see in class before we had vision services arrive to school – he missed a lot of school, and his grades were very low.

Overall, school nurses believe parent involvement and access to medical care contribute to how well a child's symptoms are managed. The following themes illustrate how the participants view the impact managed and unmanaged chronic health conditions have on students' specific academic success.

Unmanaged Symptoms

Low School Attendance. Nine of the ten school nurses identified increased school absences as a factor impacting children's academic performance with chronic health conditions.

Common reasons why students miss school included acute illnesses and hospitalizations. Ava identified her students with unmanaged asthma as having notable challenges attending school by stating, "Having out of control asthma makes it really difficult. They miss a lot of school and are hospitalized, so they cannot attend class, learn the material, and fall behind." Children with seizure disorders also were identified as being chronically absent, thus interfering in their academics. For instance, Dylan said:

> Yeah, some conditions cause them to have frequent hospitalizations, like sickle cell anemia is a big example of that. Although that is getting better with the new treatments that they have now. That historically has been one where – especially in the wintertime when it gets really cold the kids are frequently hospitalized with a crisis, so they miss a lot of school time, which impacts their academics. There is a lot of coordinating of care that needs to be done in order to make sure they stay healthy, are able to come back to school, and are still able to remain successful.

Other school nurses shared similar sentiments that certain chronic health conditions are naturally more challenging to manage; two school nurses mentioned seizure disorders. Students with seizure disorders were described as having increased hospitalizations, which interferes with their school attendance. Ethan shared his account of his first case of a seizure disorder in the educational setting and how it impacted the student's attendance:

> One of my kiddos with a seizure disorder is a big example of how chronic health conditions can impact school. The child spent a lot of time in the hospital, which made him miss school. I can pull up how many days he missed last year. He was absent for 16 days – all excused because of medical concerns. His grades are ok, but he would be doing a lot better if he had consistent attendance.

Throughout the individual interviews, it was clear that based on the school nurses' experiences, chronic health conditions impeded the attendance of students who had unmanaged health symptoms, which interfered with their academic performance.

Difficulties Participating in Curriculum. Alongside challenges attending school, half of the school nurses stated symptoms of chronic health conditions could make it difficult for children to participate in school instruction. They expressed symptoms such as fatigue, low energy, and chronic pain that can intrude on students' ability to engage in the school curriculum actively. In this regard, Jaden noted:

> When students get little sleep, they come to school tired. They just cannot focus. We have space in our office where students can take brief naps, and it's just something you have to do because they are falling asleep in class. We have to find the root problem in these situations. Is it something that is occurring just once or more often? This will determine the best way to intervene.

I asked Jaden to explain if he noticed a pattern concerning which students were more likely to have reoccurring issues with fatigue, and he stated:

> Usually, kids who experience chronic pain I see in my office the most. I have not noticed it being one chronic health condition – like not just asthma – but it is generally students in pain. Pain is something that can occur with many chronic health conditions.

Additionally, nurses said symptoms can impede the students from participating in activities that require rigorous activity, such as sports, recess, and physical education (PE) class. Charlotte provided her unique experience working in a high school and stated:

> In the middle school and the high school, their gym is more intense than it would be in the elementary school, and you really have to look at your asthmatics and stuff like that.

> With diabetics, especially, most of their physician's orders require us to do finger sticks before they start gym and afterward because if they are at a certain number, then they can't participate. If they are too high, they can become dehydrated quite quickly and go into diabetic ketoacidosis. If they are too low and they start to exercise, then they can really drop and end up needing emergency attention. Both of those can need emergency attention, so that's one of those things that, as they get older, things get more intense.

Based on the interviews, though all school curricula can be considered valuable, nurses seemed saddened when discussing how students feel when they cannot participate in fun activities during their PE or extracurricular athletic activities. One nurse was on the verge of tears when talking about how her students' self-esteem and efficacy change when they cannot engage in activities and see their classmates without chronic health conditions participating in pleasant activities. In these interviews, it was evident that students with unmanaged symptoms face challenges at school. Complimentary to these symptoms impeding their ability to adhere to grade-level expectations, they can also inhibit them from engaging in enjoyable experiences at school, such as participating in extracurricular activities and PE.

Managed Symptoms

Similar to students without chronic illnesses. Children with managed chronic health conditions were reported, by this sample, to demonstrate academic performance similar to students without chronic health conditions. Concerning children with asthma, Ava verbalized:

> If they have well-controlled asthma, they really – it does not impact them except if they have to do some modifications or something like that. If it is well-controlled, they miss very little school and perform like others.

Nurses provided less elaboration on these similarities in academic experiences between children with and without chronic health conditions but shared similar sentiments that distinct differences were not apparent.

Psychological Functioning

School nurses' perspectives on the impact chronic health conditions have on students' psychological functioning are categorized into two main overarching themes – maladaptive and adaptive responses. I selected these categories based on the existing literature in positive psychology that states that mental health does not exclusively include the presence or absence of clinically significant maladaptive symptoms. It also includes prosocial and positive indicators (Suldo, Savage, & Mercer, 2013). Additionally, I believe it is vital that children with chronic health conditions are perceived as whole persons who exhibit strengths despite their challenges. Thus, the proceeding section serves as a model of this belief by highlighting both psychological functioning areas.

Adaptive Responses

Children are responsible. Chronic illnesses are long-term conditions that require consistent monitoring, education, and adherence to a treatment regimen to help manage symptoms. These efforts are necessary to help maintain good health, so school nurses acknowledged these students as responsible. This strength was identified among school nurses across grade levels, and the extent of responsibility varied based on the students' physical and developmental capabilities. At the elementary school level, Jaden expressed:

> I'll have children just come down before or during school without a reminder because they know it's time for medication. They will see me in the halls and yell to me that they will see me at such and such times. Some of these children have been doing treatment for

so long that it is just ingrained in their minds what to do. Once they know what to do and have a routine, they get proactive and just do what has to be done.

Concerning students in the secondary grade levels, Ava said her students with diabetes and well controlled symptoms "have a lot of knowledge on how to carb count and adjust their insulin. They can become very independent very early." Isla, who is employed in a high school setting, endorsed similar sentiments by saying:

> When adolescents reach high school, it is expected they are more independent – of course not all, but knowing what their medication is and taking it just like the doctor says is something expected. There are even times where students will go to their own appointments, since they can drive, obviously not surgeries or serious appointments like that, but things like wellness checks, minor things, they go to these.

Children are resilient. Four school nurses also referred to students with chronic health conditions as being resilient. The American Psychological Association (2012) defines resiliency as an individual's ability to adapt to adverse events encountered in life. Children with chronic health conditions face, at times, scary, unpredictable, and unpleasant circumstances. Despite these occurrences, nurses viewed them as optimistic and determined individuals who persisted with their daily activities. Holly voiced this perspective by saying her students "work hard and continue to thrive despite individual or systematic barriers." When asked to elaborate on her response, she said:

> Similar to our prior conversation, there are barriers that can impact children's health outcomes. Limited access to medical care, poverty, trauma, language barriers, and inflexible parental work schedules are factors that can impact children or their parents. When the parents struggle, the child struggles as well. We have children who encounter

> such significant hardships but are smiling every time I see them. These youth are very strong.

Bella also spoke passionately about the role of resiliency in the mental health of students and stated a student's mental health is mainly dependent on their resiliency. Factors that can increase resiliency, according to Bella, include awareness, acceptance of the chronic health condition, a supportive connection, and access to mental health services. Ethan shared similar thoughts and said his "students encounter roadblocks that make things tough, but when positive and healthy supports are present, they keep going." Regardless of the difficulties that students with chronic illnesses face, the school nurses reflected on the strengths that this population of children embodies.

Maladaptive Responses

***Depression*.** Within the maladaptive domain of mental health, seven out of the ten school nurses mentioned depressive symptoms when asked about the mental health of students with chronic health conditions. Depressive symptoms can range from mild to severe and include feeling sad, worthless, loss of interest or pleasure in activities once enjoyed, changes in appetite, trouble sleeping, loss of energy or increased fatigue, increase in purposeless activity, difficulty thinking, and suicidal thoughts and behaviors (American Psychiatric Association, 2013). Ava responded:

> Most kids with chronic health conditions probably have some degree of depression, whether it is temporary, or situational, or ongoing - an adolescent, in particular, they do not want to be different. They want to be the same as everyone else, and at some point, they are cognitively aware that this is for the rest of my life, and that is a hard thing for even adults to accept. When they are younger, they do not really realize that it is for the

> rest of their life, but when they reach adolescence, that awareness is there. That is really hard on a lot of them.

In Bella's interview, she verbalized students having feelings of sadness due to being aware of the long-term care necessary to manage their chronic health conditions. She said her adolescents make statements including "I do not want to have to continue checking my blood sugar," and "I want to be like everyone else" because similarly to other children around this age, adolescents desire to build and maintain friendships with peers, making it an influential journey in their development. She endorsed seeing these symptoms occurring more with adolescents versus children in younger years. When asked to elaborate more on her experiences working with the adolescents, Bella stated:

> We have a high immigrant status, the situations that the kids are going through, the fights, the drugs, the self-medicating, so much of it is not identified and not saying that everyone needs meds, but some may just need counseling some may just need support. It's not good. It makes me sad.

Three school nurses working in primary grade levels said they also encountered children with chronic health conditions exhibiting depressive symptoms. They all recognized that these feelings are not as severe as they would occur in secondary schools but include infrequent self-harm, excessive crying, and sadness of being different from their peers.

Anxiety. Half of the school nurses reflected on the impact of excessive anxiety on their students with chronic health conditions. The body's response to feeling anxious can include restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbance (American Psychiatric Association, 2013). The term excessive is a critical component because feeling anxious is normal, adaptive, and helps us react when in danger. For example, for students

with chronic health conditions, feeling anxious when having surgery or taking a shot can be deemed normal because these are appropriately viewed as stressful situations. Anxiety becomes maladaptive when thoughts or physical symptoms cause distress and interfere in children's ability to complete their daily activities. School nurses said their students endorse being fearful of getting sick, along with worries performing aspects of their treatment regimen (e.g., shots, swallowing pills). Ethan described a recent encounter where a student with spina bifida and additional medical complexities had difficulty catheterizing himself. He stated, "the family and I believe he can do it himself. His parents recognize he should be doing it himself, but if you mention it to him, he gets terrified." I asked him the implications of this fear, and his response was:

> It puts the nurses in a weird position because he's a growing boy, and he's experiencing hormones and stuff, and his body responds to the female nurses, and they start to get uncomfortable. I know at home too it causes some trouble. That's why it's something we are trying to fix.

Ethan's story highlights how anxiety can impede students' relationships at school and home. Isla provided another account of how fear is present in children by voicing her experiences working with school-aged children who must swallow pills. She said one student swallowed a marble when younger, which required immediate medical attention. Isla indicated the family has identified liquid versions of some of her pills or will mix the medication into her food. Still, in situations where this is not an option, the child will cry when asked to take medicine. Fortunately, Isla stated that the child's avoidance is not towards "essential" medications, but her regimen is not being completed as prescribed, and Isla recognized the need for intervention.

Two nurses mentioned the complexity of identifying anxiety among children with chronic health conditions because some anxiety mirrors the student's chronic health condition. For instance, Ava said:

> For kids with asthma, comorbidity is often anxiety. Then you have to piece out, is it an asthma attack or is it an anxiety attack, because they look very similar, and you don't know unless you do an assessment. Of course, you don't want to air on the side of thinking it's an anxiety issue when it's really an asthma issue because asthma is different. You don't want to make a mistake and not treat them if it's an asthma disorder. If it is asthma-related vs. anxiety. Anyone who has difficulties with breathing is going to have anxiety problems, I think.

Holly also expressed that "sometimes it may be anxiety, but it could also be something else." Both Ava and Holly expressed the need for proper education and assessment for anxiety and chronic health conditions to respond to their student's needs appropriately.

Question 2: What key stakeholders do school nurses identify as being integral to supporting youth with chronic health conditions in schools?

Bronfenbrenner's (1977) ecological model of human development is a multi-systematic framework that describes how environmental factors influence children's development. In the center of the framework is the child, and surrounding the child are different levels of the environment that affect the child's functioning. The level closest to the center is the microsystem and encompasses the relationships children have with individuals and organizations in their immediate surroundings. Deductive coding was used to guide the process of identifying stakeholders school nurses identified as integral to supporting youth with chronic health conditions. I completed this process by conducting a literature review on this topic, identifying

codes (e.g., school psychologist, teacher, principal, doctor), and I searched this transcript for the codes. The following section reflects on school nurses' perceptions of the stakeholders they view as integral in supporting youth with chronic health conditions.

Family. Each school nurse reflected on the role parents have in supporting children with chronic health conditions. The most common function of a parent identified by participants was coordinating with school providers to exchange appropriate information to care for their child. Bella elaborated on this role during her interview by stating:

> I had a few phone calls during COVID from parents like 'what should I do?' just because they need that kind of steppingstone of should I take them to the doctor, should I not, what do you think this is, what do you not?

Jaden, Ethan, and Holly shared similar thoughts by stating parents play a huge role in figuring out how to provide the appropriate care for their child. They stated that they serve as the primary medical personnel for some students; hence, they often speak to parents via phone or in-person to answer questions and give their input on how parents can help manage their child's symptoms. Other school nurses described parents' involvement in meetings at school, including Individualized Education Plan team meetings and Parent-Teacher conferences. Nurses stated that these meetings serve as an opportunity for parents to be aware and involved in the services that are being implemented in school.

When asked to describe the extent to which parents are involved in the educational process, all school nurses stated it varies. There appeared to be a consensus that most parents try their best to be involved, but parent's knowledge of chronic health conditions, availability, and transportation tend to be the most significant barriers that interfere in their involvement. Florence provided an experience that showcases this by saying, "I get the impression that parents are

involved as much as their circumstances allow them to be – inflexible work schedules and a lack of transportation stops them from being as involved." I asked Florence how she handles parents who have limitations to their involvement, and she responded:

> I try to identify the issue and determine resources that can help. For example, if the issue is transportation, previously we can use phone or try to find different times to work with the families, to help work around that barrier. We haven't encountered a lot of transportation issues during the pandemic. Our very medically fragile children are completing remote learning and have personnel going into their homes, and now with IEP meetings, those are via Microsoft Teams for everyone.

In addition to biological parents, Charlotte identified additional immediate family members who are heavily involved. She stated:

> We are number 2 in the nation for grandparents raising their grandchildren. There's a couple of counties in our state that are at like 85%. In my county, it's around 60%, and to be quite honest, I think the numbers are higher because grandparents are afraid to get ahold of DHHR because they don't want to take the benefits away from their kids, even if they are the grandparent. It's not necessarily just grandparents; it is aunts, uncles, friends, boyfriends, and girlfriends, so we have a ton of non-parental guidance in our state.

Overall, school nurses recognized family has being valuable to supporting youth with chronic health conditions in schools.

Teachers. According to all school nurses in this sample, general education teachers are pivotal in supporting children with chronic health conditions in school. Students with chronic health conditions are often integrated with the general education setting, meaning they spend most of their time at school interacting with their teachers. School nurses reported that teachers

are responsible for implementing instruction, completing questionnaires sent from physicians and social support services, communicating with parents, monitoring health symptoms, and being a trusted adult for children. Gabriella shared her perspective on teachers, and stated:

> Teachers are providing the students' instruction in the classroom and monitor how the student is doing in class. My office is located in the middle of the school, and I frequently have teachers pop in to ask a question or share information with me about their student.

When asked about the comfort level of teachers supporting children with chronic health conditions, Gabriella stated the following:

> The teachers here are phenomenal. Our school has a great school climate, and we really work as a team. I hope that all the teachers would feel comfortable coming to me if they ever felt uncomfortable, but that is not something I can recall encountering.

Bella shared a unique experience of a teacher who facilitates a teen parenting class for expecting mothers. She said, "our teen parenting teacher is great with that transition to college and looking for different kinds of scholarships. In the classes, the students also learn about the body," which underlines the role teachers have in children's functioning. Participants also emphasized teacher's efforts in learning more about chronic health conditions. Most school nurses noted teachers receive professional development on common chronic diseases, especially if a student with a need will be present in their classroom. In this regard, Holly stated:

> I conduct a seminar at the beginning of each school year to review some safety, health, or medical procedures. For example, if the topic is allergies, we discuss what an allergic reaction looks like and appropriate action steps. Obviously, this year we spent a significant amount of time discussing COVID-19. It seems like COVID-19 has dominated a lot of our conversations this year.

In general, school nurses stated teachers varied in their knowledge and comfort in chronic health conditions. The consensus seemed to be some teachers felt well-versed in chronic illnesses to the point they feel comfortable counseling and providing medical advice to students. In contrast, others have limited experiences with chronic health conditions and are nervous about having children with complex medical needs in their classroom. Dylan shared:

> I do a lot of training with teachers related to chronic health conditions. I also invite them to come up to me confidentially with any personal issues medically or questions they have – so by offering that up front they start to feel a little more comfortable coming to me and asking questions.

School nurses, overall, spoke highly of the teachers that are involved in their school settings.

***Social Services Team*.** School nurses categorized school psychologists, social workers, and school counselors as the social services team essential in supporting students in the school setting. These professionals were grouped because school nurses described them as having complementary roles, and nurses discussed them as existing as a team. Common responsibilities by the social services teams included communicating with parents, providing academic and mental health services to children, participating in IEP meetings, and helping families identify resources to meet their basic needs. School counselors were elaborated upon the least in the interviews. Only one school nurse discussed school counselors at length, and her sentiments were related to her different experiences with school counselors in the educational setting. She stated:

> In [removed] school counselors are academic counselors. They sometimes believe they can take on the role of the mental health counselor even without any mental health background. They took maybe a little webinar or little in-service on mental health and

> they think they are the experts. I did have a school counselor at the last school who really believed that she knew everything about asthma, and she was counseling kids on asthma. She [thought she] knew everything about mental health and that was frustrating to me – trying to get in between that and her advice. I had another school counselor in that building who didn't have mental health background and actually was very clear on her role and had good boundaries, so it depends upon the individual.

In general, school counselors were included as part of the social services team to help support youth with chronic conditions. According to the school nurses, social workers are heavily connected with the families. Ava stated:

> The social workers had maybe 25 to 50 students, so the benefit of working with them is they knew their families well. They had insight into the families that I might not have known about and it was really nice to get that perspective on it. Some of the areas the families were struggling with were housing, food shortage, lack of health care. Sometimes the social worker would help them apply for healthcare or health insurance, and would often help them to locate housing, jobs, especially when I was working with older kids.

Isla and Jaden endorsed similar experiences, and said the social worker collaborates with families to identify needed resources at home.

Nurses' perspectives of the role of school psychologists in the educational setting varied by their school's grade level. In elementary schools, school nurses described school psychologists as helping promote students' academic success. When asked about the benefits of having a school psychologist, Ava stated:

> Well, the benefit, I think, is to provide better education for the students and improve their educational academic outcomes. I think working closely with them helps support the students and the families because really when you're working with a student you're also working with the family. Sometimes, either the school nurse, school psychologist, or the social worker, between the three of us we had different numbers so we could get through sometimes to parents that other people couldn't reach.

Holly shared the role of the school psychologist at her school by stating:

> For the past few years, our school psychologists was contracted from [removed]. The school psychologist came one day a week and completed the special education evaluations. We don't really have a lot of behavioral concerns at this school, mainly academics. The school psychologists has mainly helped with academics.

Related to the special education evaluations, three of the school nurses said their school psychologist facilitates the special education process at their school and are responsible for completing the testing and leading the eligibility meeting. Additional findings regarding the special education procedures are discussed in Research Question 3.

At the secondary level, all the school nurses who have placements at middle and high schools said the school psychologist and counselor are involved in addressing mental health concerns. As described in Research Question 1, school nurses identified depression and anxiety as being prevalent among students with chronic health conditions. Ethan shared the following sentiments:

> There were students seeing the school psychologist or counselor to gain mental health support. The psychologist does not disclose to me what they talk about, but I know of a

> few students who see them regularly. It's great that we have these resources at the school because the kids need them.

Overall, social service professionals were perceived as beneficial to ensuring that students with chronic health conditions received academic and psychological supports at school, and their families received resources at home.

***Administration*.** Instructional leaders, including principals and assistant principals, were identified as school-based professionals who help students succeed in the school environment. Participants stated administration mainly helps communicate with parents and ensure "safety and support." Concerning communication with parents, school nurses said that administrators would be the ones to contact parents in situations where behavioral issues are of significant concern. Ava noted that while this is the principal's role, sometimes, parents would not answer the phone if they recognized it was the principal calling. Administrators also participated in problem-solving meetings, according to the school nurses. Dylan indicated school administrators "make sure that everybody is doing what they are supposed to be doing according to what is written in the IEP." She viewed them as the experts at the table concerning how to promote student success. Gabriella, Isla, Ethan, and Jaden also claimed that their setting's administrators are integrated into the problem-solving process. A unique perspective shared by Bella is how her principal is involved in drug assessments. Bella indicated that due to being in a high school setting, she completes many drug assessments, and principals have duties in this process. Specifically, she noted:

> If a student is thought to be under the influence in the classroom, they notify an administrator, and the administrator will notify me and the campus police because we do not let them be sent [to the office] alone or have another student escort them because of

the fact that if they do have a controlled substance on them, they can just drop it on the way.

Following the drug assessment, Bella said she "gives the administrator and parents both the red-flags, and they determine what the appropriate next steps are going to be." In essence, administrators were viewed by school nurses as overseeing the operations of the school, which helps children with chronic health conditions remain safe and receive the appropriate supports.

Medical Providers. Children with chronic health conditions often require assistance from medical providers to help regulate their symptoms. School nurses identified a range of medical providers pertinent to assisting children in the school setting, including pediatricians, dentists, optometrists, and themselves. Medical professionals play an active role in supporting the educational advancement of students, such as coordinating care for students, providing medical, vision, and dental services to students, educating individuals in the child's immediate environment, and more recently, determining if it is safe for children to attend school in-person during the COVID-19 pandemic.

Regarding increasing non-medical providers' capacity, all school nurses spoke about their role in educating others in chronic health conditions. Ava glowed when speaking on her experiences educating others and said, "I did a lot of education. That's what I really enjoyed – educating kids on their health conditions and how to manage them." Other school nurses reported that educating school professionals took the form of facilitating seminars at school, providing input during the IEP meetings, and informally consulting with teachers when seeking input of a specific chronic health condition.

Participants spoke highly of the medical supports available to address children's medical needs, such as mobile dentists and clinics that travel to the school to help children with chronic

illnesses. Charlotte described dental services at her school by saying, "the local dentist in our town comes in and does free dentistry on students. We just set up in our nurse's office, find out what students need work done, and so forth." Charlotte later spoke on additional medical services available at her school:

> We have our school-based health clinics who come into every one of our schools at least once a week - some of them may come multiple times a week, but at least once a week. Students are able to get, my gosh, anything from vaccinations to annual physical exams to their monthly medication and so forth.

Concerning the COVID-19 pandemic, Bella completed the interview in July 2020, the summer following the abrupt closure of schools during the spring classes, and before decisions were made concerning how instruction would be provided in Fall 2020. Bella said:

> We've already had some doctors say that, because the immune system of some of these kids with chronic conditions is weaker, that school is not the place for them, so that is going to hurt them academically in a different kind of way, versus if we ever go to full-time face-to-face.

Additionally, Jaden said at his school, "doctors played a role in advising students on if it was safe for them to attend school." Among the school nurses I talked to during the Fall 2020 school year, all spoke on making decisions regarding children's attendance at school. Gabriella said she encountered ethical decisions in this regard, in which she knew of students who were diagnosed with COVID-19, and even though teachers would inquire, this was not information she could share. Isla announced she allocated much time working with school administrators, security, and the custodians to identify and implement school procedures to ensure the students' safety.

Throughout the individual interviews, it was clear that nurses perceived medical

providers internal and external to the school setting as essential to providing care to children with chronic health conditions. Amongst school nurses, all reported frequently collaborating with stakeholders to increase students' care with chronic conditions. The following section will further elaborate on the practices school nurses adopt to serve this population of youth.

Question 3: What are school nurses' practices collaborating with pertinent stakeholders and organizations that they identify as being important in supporting youth with chronic health conditions?

To answer this question, I used inductive coding to examine how school nurses described their collaborative practices with pertinent stakeholders. As a positivist, I analyzed these findings by generating themes in the school nurses' responses to develop an explanation that can predict a phenomenon. Based on the school nurses' responses, the objectives for collaborating were the following – (1) improve children's access to medical services, (2) develop individualized health plans, and (3) provide interventions and accommodations.

Collaborating to Improve Children's Access to Health Services. School nurses described engaging in the collaboration process as a means to improve children's access to medical services. They identified a host of stakeholders with whom they collaborate to provide children with needed care, including mobile clinics, community organizations, and medical providers. School nurses' success in establishing partnerships appeared to be multifaceted. First, school nurses described being well-versed in the resources available in their community. Charlotte explained her connectedness with dentistry, health clinics, mental health organizations, universities, physicians, and hospitals in her community, that allow her to plan and implement services to support the children in her school. For instance, she shared:

> We have free dental visits. I have a dentist that comes in my schools who's the local dentist in our town. He comes in and does free dentistry on students, so we just set up in our nurse's office, find out what students need work done, and so forth. We collaborate with that. We also have a mobile dentist that gets grants through [removed] and they can get them through [removed] and so forth, and so they go all over the county and they have like an RV that is set up as a mobile dentistry.

Jaden indicated he is consistently reaching out to churches, clinics, and non-profit organizations to gather donated supplies, educational materials, food, clothing, or resources for families to have available in the clinic. Dylan also endorsed having positive relationships with medical professionals in her community and said she keeps a list of new outpatient clinics and providers that she would like to contact to build a relationship. Consequently, being aware of their cities' resources was identified as the first step in providing children the appropriate care.

Alongside being aware of different medical services, school nurses reported their demeanor helps with the collaborative process. A unique and admirable personality trait the school nurses endorsed is being assertive when it comes to acquiring resources that will help their students be successful. For instance, Charlotte described herself as an assertive person who is not afraid to advocate for her students and get things accomplished. While employed in the middle school, she shared a case where she collaborated with a probation officer to get a parent to sign paperwork that would provide the child access to medication. Specifically, she said:

> I went to his probation officer, this is a kid from the middle school, and I asked his mother if she could fill out the paperwork, because we can't fill out the paperwork. It was $17 a month but it was still that the kid needed his medication, I had to collaborate with this probation officer frequently to get support for the student, but I did.

Ethan mentioned how he "just takes a stand" when it comes to advocating for his students, and Isla described her personality as "I am the very opposite of shy when it comes to voicing my opinions and getting things my students need." I deem this quality as advantageous to the collaboration process because it can explain why school nurses endorsed engaging in frequent collaboration with stakeholders and report mostly positive and productive relationships with individuals in their schools and communities. Nurses described being comfortable inserting themselves on problem-solving teams and taking the initiative to contact stakeholders to help facilitate the collaboration process.

Collaborating to Develop Individualized Health Plans. Most school nurses talked about collaborating with stakeholders to develop a health or emergency plan to help students with chronic health conditions be successful in school. Charlotte detailed this process at her school:

> If a student has a chronic health condition, they are definitely going to have a health care plan. One of the things that we do in our county is each student has to fill out forms, and these forms ask specific questions on all of your health systems, so GI, kidney, respiratory, cardiac, blah blah blah. It's a questionnaire that every student has to fill out, and we go through each nurse who is in charge of whichever school they have. I went through 600 some of those forms to make sure that I didn't miss any student that has a chronic health condition.

Ethan shared a similar experience. Questionnaires were used at the beginning of the school year to identify students with a chronic health condition. Once these students were identified, school nurses discussed working with families, teachers, paraprofessionals, and administrators to develop the health care plan. Holly stated that the health plan at her school is "a quick one-page document for educators or paras who are working with this student, so they know what to do to

make sure the kids are safe while in school." Nurses described providing education as necessary with a health plan because staff varies in their knowledge and comfort of chronic health conditions. Nurses reported teaching personnel about chronic health conditions through professional development seminars and informally having conversations with staff. For instance, to support children with diabetes, Charlotte voiced:

> If we are doing major testing like the federal testing guidelines that we have, they have to be tested before. They have to be able to take breaks. They have to be able to drink water. They have to be able to have their snacks. Let's say they are over 300. We are going to have to give them their insulin to bring their levels down, so that's one of the things that we do is try to educate. If you have a student who is at a 400 and you just gave them a math test, and they bombed it, and they are normally not a bomber, you're going to go back and say, well he was 450, so you're going to have to give him the test over again. You have to explain to the staff. It's huge educating the staff on its not just finger sticking and reading the meter. It's how it affects the body, their brain, and if they're not getting energy, they are not going to work. Just simple little things we're explaining that to people. Then they get more into the concept of "oh, well, that's maybe why they were zoning out" or something like that, so education is huge.

Overall, the development and implementation process of an individualized health plan is a common practice nurses engage in to support youth with chronic health conditions, and these school nurses endorsed that this plan is critical to ensuring relevant school professionals are aware of students' medical needs.

***Collaborating to Provide Interventions and Accommodations*.** Each school nurse discussed collaborating with stakeholders to provide students access to special education

services. Nurses described standardized procedures implemented at their school to problem-solve resources for students with chronic health conditions. The most common consultation approach included being a member of Individualized Education Plan (IEP) teams to determine if the child meets the criteria for special education services and identify the proper supports to address the educational need. Ava said many of her students with chronic health conditions had an IEP. She described the referral process in her school as:

> If it is a student who has a chronic health condition that is impacting their education, say they have a lot of absences because of asthma, diabetes, or whatever reason, we talk to the school psychologist. The school psychologist often gets the IEP assessments rolling.

Ethan, Gabriella, Bella, Isla, and Jaden also identified the IEP process as being initiated by the school psychologists. Bella stated that the school psychologist completes the testing in her district to determine if the child qualifies for services. Once an educational need is identified, school nurses described collaborating with the school psychologists and other personnel on the core team to determine, plan, and implement supports for the student. When asked about the core individuals apart from the collaboration team, school nurses stated it depended on the child's needs. Dylan stated:

> If a student has a disability that makes it hard for them to write or speak, we have a speech language pathologist who can provide services. We have occupational therapy, physical therapy that can provide services to help teach them to be adapted to the certain education program that they can utilize, or the program has to be adapted to them depending on what needs to be done. If a student is unable to get around the building, like needs to be in a wheelchair, we need to make accommodations for that. We have elevators and stuff like that. We need to make accommodations for emergency

> evacuation plans. We need to have transportation services attend IEP meetings, so they are able to access transportation to get to and from school that is appropriate for them. If they need to have aid on the bus in order to make sure that they are safe on the bus and then we need to provide that. Most of that is addressed in their IEP.

Charlotte noted that given her background in mental health and behavior, she "sits in many IEP meetings and tries to educate administration, teachers, and so forth" on these domains. Each school nurse endorsed satisfaction with collaborating with stakeholders on the IEP teams. Jaden voiced he feels "valued and supported by the team, even as a school nurse." Holly stated she has "developed strong relationships with the team, and they value the input that she contributes to the process."

If a student does not meet the qualifications for an IEP, some nurses discussed pursuing a 504 plan. A 504 plan provides students with accommodations that will ensure they are successful in the learning environment. Whether a student with a chronic health condition receives a 504 plan is based on their need. For instance, Charlotte said, "some asthmatics, they don't necessarily need a IEP, but every diabetic definitely has a 504 because there's so much to play into their day-to-day academics." In general, nurses acknowledged that structured problem-solving meetings serve as an opportunity to collaborate with the professionals that align with the services students need to be successful in school.

Summary of Findings

The current study aims to understand school nurses' practices and perceptions in developing and implementing services within an ecological system to support students with chronic health conditions. I examined school nurses' beliefs on the academic and psychological impact chronic illnesses have on children's educational prosperity with chronic health conditions.

This study also aimed to understand nurses' attitudes toward the pertinent stakeholders involved in children's functioning with health conditions. Once I understood these key stakeholders, I investigated school nurses' collaborative practices to address these youth's needs.

School nurses in this study described the academic outcomes of children with chronic health conditions as being dependent on how well their symptoms are being managed. Students with adequately regulated symptoms were perceived as having academic performances similar to students without chronic health conditions. When children have difficulty controlling their symptoms, nurses endorsed increased absences, decreased attention in class, and difficulty participating in the school curriculum. Concerning factors that can influence symptoms management, participants described parent involvement and access to medical care as critical. Related to psychological outcomes, nurses endorsed these children exhibiting adaptive and maladaptive characteristics. Adaptive characteristics were considered the students' strengths and included the children being responsible and resilient. Factors they perceived as maladaptive included the occurrence of anxiety and depressive symptoms, along with risky coping strategies, including self-harm and substance use.

When asked to identify the stakeholders pertinent to the functioning of students with chronic illnesses, parents were described as having an essential role in coordinating the care between the home, school, and medical settings. They also identified teachers, administrators, school psychologists, social workers, school counselors, and medical providers as being monumental in facilitating care for children. According to school nurses, teachers are responsible for implementing instruction, completing questionnaires sent from physicians and social support services, communicating with parents, monitoring health symptoms, and being a trusted adult for children. They viewed administrators as vital in ensuring children's safety and overseeing

whether practices are implemented as planned. The social services team assumed various duties, including communicating with parents, providing academic and mental health services to children, participating in IEP meetings, and helping families identify resources to meet their basic needs. The final group of stakeholders identified by school nurses was medical providers. Nurses deemed these professionals as active in coordinating care, providing medical, vision, and dental services, educating individuals in the child's immediate environment, and, more recently, being members of the decision-making process to determine students' safety navigating the COVID-19 pandemic.

Lastly, school nurses discussed their practices collaborating with pertinent stakeholders to support the outcomes of students. The main objectives for collaborating with stakeholders were to improve children's access to medical services, develop individualized health plans, and provide interventions and accommodations. School nurses accomplished these objectives in various ways, including being aware of the community's resources, delivering student services, and being proactive in advocating for their students' needs. The findings from these interviews help provide more understanding of how school nurses function in an ecological system to support youth with chronic illnesses.

Chapter Five: Discussion

The purpose of this study was to investigate school nurses' practices and perceptions in developing and implementing services within an ecological system to support students with chronic health conditions. I completed interviews with ten school nurses across the United States to explore school nurses' practices within a geographically diverse sample. This chapter interprets and summarizes each research question that was reported in Chapter Four. Additionally, this section will discuss limitations, future research, and implications for practice.

Explanation of Findings

Research Question 1: What are school nurses' perceptions of the impact chronic health conditions have on students' academic and psychological well-being?

This study's results support previous scholars' findings that have stated chronic health conditions can potentially impact the academic functioning of children with chronic health conditions. Crump and colleagues (2013) said students with chronic illnesses miss more school and demonstrate lower mathematics test scores than children without health adversities. These findings were significant among youth with chronic neurodevelopmental and seizure disorders but not those with cardiovascular disease or diabetes. These perceptions partially align with the sentiments of my sample of school nurses. Although Crump et al. (2013) identified differences based on the chronic health condition, the nurses in this sample categorized differences based on

symptom management. Similar findings were reported in McCarthy, Lindgren, Mengeline, Tsalikian, and Engvall (2003), who reported that the highest health predictors of academic achievement among children with diabetes were the number of hospitalizations and students' metabolic control. An additional study found adolescents with chronic conditions have approximately 12 absences per year, depending on their health status (Shute & Walsh, 2005). These findings suggest that there are differences in academic outcomes between children with and without chronic health conditions, but more information is needed on the factors contributing to these performance differences.

Concerning the psychological functioning of students in this population, the literature on children's adaptive skills with chronic health conditions is narrow. There still seems to be some parallel between school nurses' experiences and the few studies that have explored this topic. For example, school nurses in this current study described children with chronic health conditions as responsible and resilient. Beacham and Deatrick (2015) also discussed these strengths. In this qualitative study, children with chronic health conditions demonstrated a variety of responsibilities, including developing a routine for home, school, extracurriculars, and fun events to help manage their symptoms. When exploring the outcomes of children living in disadvantaged neighborhoods, additional findings have found that children's ability to adapt to aversive situations is related to optimal management of asthmatic symptoms (Mitchell, Murdock, & McQuaid, 2004). The variety of strengths embodied by children with chronic health conditions is an understudied field and warrants additional investigation.

More information is known about the maladaptive symptoms among children with pediatric illnesses. Some researchers speculate that the psychopathological concerns of students with chronic health conditions are more concerning than academic difficulties. For instance,

Olson, Seidler, Goodman, Gaelic, and Nordgren (2004) surveyed 384 school educators to analyze their perceptions of chronic health conditions in the classroom. The sample included 241 classroom teachers, 54 special education teachers, 10 school nurses, 69 administrators, and 10 staff professionals. Data revealed that school professionals were more concerned about the impact chronic health conditions have on peer relationships than academics. These findings are similar to the individual interviews with the school nurses. They appeared more saddened and concerned with the impact chronic health conditions can have on students' interpersonal relationships and psychological functioning, than on their academic outcomes. School nurses described children with chronic health conditions as wanting to be similar to their peers. They stated the youth often expressed disappointment when they cannot engage in sports and extracurricular activities with their peers. In the literature, studies have described this sense of feeling different from peers as a shared experience among children living with a chronic illness (Davidson et al., 2004; Kent, 2003; Woodgate, 1998). Feeling rejected and excluded from peers has been predictive of future depressive symptoms (Prinstein & Aikins, 2004). School nurses in this study identified depression as prevalent among their students with chronic illnesses. Pinquart and Shen (2010) conducted a metanalysis that included data from 33,047 children and adolescents with chronic diseases. They found higher levels of depressive symptoms among this population when compared to peers without chronic illnesses. The highest rates of depression were reported among children with chronic fatigue symptoms, fibromyalgia, chronic migraines, epilepsy, and cleft lip and palate. Researchers have speculated that these symptoms can be attributed to physical symptoms and the need to adhere to a strict treatment regimen, which can interfere with children's daily responsibilities and peer relationships (Suris, Michaud, & Viner, 2004).

Anxious symptoms were also identified by school nurses in this study as a psychological symptom experienced among children with chronic illnesses. Another metanalysis by Pinquart and Shein (2010) found elevated levels of anxiety in youth with chronic health conditions compared to those without these adversities. Further analysis from the 29,124 children and adolescents with chronic illnesses who participated in this study showed higher levels of anxiety in children from 0-6 years than in middle childhood and adolescence. In a sample of 9,834 youth, Ortega et al. (2002) found that 49.2% of youth with asthma met the criteria for an anxiety disorder, which was clinically significant compared to youth without asthma. These findings that youth with chronic health conditions endorse higher rates of anxiety symptoms or a disorder compared to children without chronic illnesses has been replicated multiple times in the literature (Alfstad et al., 2016; Bakare et al., 2008; Bussing et al., 1996; Calam et al., 2005; Khandelwal et al., 2016; McCauley et al., 2007).

These findings shed light on school nurses' perspectives of the academic and psychological impact of chronic health conditions on children's well-being. Given that school nurses are deemed medical experts in schools for supporting youth with chronic health conditions, it is reassuring that their real-life experiences mirror what has been found in the literature.

Research Question 2: What key stakeholders do school nurses identify as being integral to supporting youth with chronic health conditions in schools.

This study's analyses align with principles outlined in Bronfenbrenner's (1977) Developmental Ecological Model and the Participatory Intervention Model (PIM) developed by Nastasi and colleagues (2000), which served as the theoretical frameworks for this study. Bronfenbrenner's model explores how different care systems contribute to children's functioning,

and the PIM discusses the importance of involving key stakeholders in supporting children and youth with chronic health conditions. Both models support the premise that individuals in a child's immediate environment can be significant in holistically addressing youth's diverse needs in this population.

In the current study, school nurses identified parents, teachers, administrators, social services, and medical providers as pertinent to the healthy development of youth with chronic illnesses. In a qualitative study by Beacham and Deatrick (2015), 32 children ages 8 to 13 years with a chronic health condition provided feedback on the individuals who contributed to their health. Parents were the most common stakeholder identified by youth in helping them navigate their life. The children reported having access to their phones to help update their parents on their well-being while away and stated having access to their caregiver helped increase their confidence. One youth described her parents as proactive about learning about her condition and reframing it as a regular part of her identity. Supporting parents of children with chronic health conditions has been acknowledged as an essential role for educators. In a study by Legar (2014), educational professionals mentioned parents are anxious about a variety of concerns, including "a child falling behind or repeating a year at school, managing low immunity, managing the needs of siblings, to broader issues of social isolation for immigrant families" (p. 9). These educators highlighted the long-term care of children with chronic illnesses and emphasized the need to assist parents as they transition through the educational system.

Alongside parents, teachers and nurses have been identified as helpful in improving children's functioning with chronic illnesses (Beacham & Deatrick, 2015). Children reported that it is beneficial to have school professionals who are understanding of their condition. In situations where school staff did not understand their condition or treatment, the participants said

this served as a barrier to managing their symptoms. The experiences expressed by these children align with other research on staff perceptions of facilitating care for children with chronic conditions. Selekman (2017) studied the experiences of general education teachers supporting children with chronic health conditions. She found teachers want to be informed about their students with chronic conditions but often lack education on the conditions and have limited understanding of how to provide direct health care to their students.

Members of social services teams have also been deemed valuable to the development of youth with chronic health conditions. Social services personnel include school counselors and school psychologists. School counselors are known for their academic achievement training, social-emotional skills and help transitioning students to postsecondary options (American School Counselor Association, 2020). Their credentials and expertise make them valuable stakeholders for addressing relevant concerns related to youth with medical adversities, including school reentry, educating teachers on effective academic and behavioral strategies, and building partnerships with parents and community leaders (Kaffenberger, 2006). School nurses in the present study endorsed similar roles and responsibilities and described counselors as necessary for connecting with parents and promoting students' academic success. Kaffenberger, Edstorm, Hardison, and Perdu (2002) surveyed 250 school counselors on their roles and responsibilities serving children with chronic illnesses. The majority endorsed providing a range of services, such as assisting with homework and 504 plans, building teacher's capacity in knowledge of chronic diseases, negotiating credit for missed work, and participating in meetings with parents, teachers, and administrators.

Concerning school psychologists, these professionals are commonly identified as being appropriate school-based mental health providers for youth with chronic illnesses due to their

extensive knowledge in academic, behavior, mental health assessment, consultation, tiered system of support, intervention, and prevention (Batsche et al., 2005). In my unpublished thesis (Singleton, 2019), I surveyed 260 school nurses to capture their perceptions of school psychologists' roles when supporting youth with chronic illnesses. These findings indicated most school nurses viewed the role of school psychologists as beneficial to the health of students with chronic health conditions. The majority of school nurses perceived school psychologists as encompassing many roles, with the most common being consultation. Findings from the current study extended what is known about school nurses' perceptions of a school psychologist, and elaborated on the roles of school psychologists in the educational setting.

Lastly, school administrators are responsible for the overall function of a school; hence, they embody a vital role in supporting youth with chronic health conditions. Limited studies have explored administrators' roles in providing care to children with chronic health conditions in the educational system. Leger (2014) stated administrators help facilitate individual or group staff meetings to support the welfare of students, serve as a liaison between the school, home, and medical environment, and develop programs in school to promote student's well-being. The results of this study support the findings of Leger (2014). School nurses in this current study described administrators as being responsible for ensuring the safety of children with chronic health conditions and overseeing whether practices are being implemented as planned.

Research Question 3: What are school nurses' practices collaborating with pertinent stakeholders and organizations that they identify as being important in supporting youth with chronic health conditions?

School nurses have been recognized as critical leaders in addressing health issues that impact school performance (American Academy of Pediatrics, 2011). The typical nurse to

student ratio in the United States is 1:1268 and the ideal is 1:750 (State Education Finance Commission, 2009). Literature reports that schools with an adequate nurse to student ratio provide more counseling services, more follow-up for school-related injuries, and better care for children with vision problems received care (Guttu, Engelke, & Swanson, 2004). School nurses in the present study stated they play an active role in supporting the educational advancement of students, such as coordinating care, providing acute medical, vision, and dental services to students, and educating individuals in the child's immediate environment. Other studies have found that school nurses spend the majority of their time administering first aid, addressing minor complaints, conducting screeners, managing immunizations, and maintaining records (Holt, Barta, Neighbors, & Smith, 2003). Croghan, Johnson, and Aveyard (2003) recognized top roles including health needs assessment, screenings, child protection management and support, managing immunizations, and implementing health interventions. The diverse functions of school nurses allow them to provide a range of services to students with chronic health conditions.

All school nurses endorsed engaging in frequent collaboration with stakeholders to address the educational outcomes of students with chronic health conditions. The purposes for collaborating with stakeholders were to improve children's access to medical services, develop individualized health plans, and provide interventions and accommodations. School nurses accomplished these objectives in various ways, including being aware of the community's resources and processes for delivering student's services, and being proactive in advocating for their students' needs. Krause-Parello and Samms (2010), surveyed 63 school nurses in New Jersey and the majority reported being open to collaborating with parents and stated they spend time collaborating with community partners to promote student health. The present study

extended the findings of school nurses' practices collaborating to support youth with chronic illnesses by providing qualitative data on how they work in an ecological system to promote the well-being of this population.

Limitations and Future Research

The results of this study should be considered within the boundaries of their limitations. Regarding the purpose, this study focused on the first two domains of Bronfenbrenner's Developmental Ecological Model. Specifically, it explored school nurses' perceptions of pertinent stakeholders and institutions involved in the prosperity of students with chronic health conditions and their experiences collaborating with these partners to support this population of students. Interesting topics explored during the interviews that were not addressed in the research questions included nurses' educational and professional history that prepared them to collaborate with a variety of stakeholders, barriers to the collaborative process, cultural factors that influence collaborative outcomes, the strengths and weaknesses of collaborating with specific stakeholders, and the impact COVID-19 had on students and collaborative practices. Future research should explore these aspects of collaboration as well as Bronfenbrenner's exosystem, macrosystem, and chronosystem as they relate to practices for serving youth with pediatric illnesses.

Concerning recruitment, my aim for this study was to have a sample of school nurses that varied in school-level, however, most nurses in this study were employed in elementary school settings. Future research should incorporate more school nurses from secondary schools to better understand how nurses from a variety of educational settings collaborate to serve youth with chronic health conditions.

Related to data analysis, all the interviews in this study were transcribed using a simple form. Segments of transcripts were reviewed if the audio appeared unclear, but transcripts were

not reviewed in their entirety. Additionally, all transcripts were transcribed by me. A second transcriber was not incorporated in this study, but could be valuable in future research to ensure the accuracy of the transcription. Additionally, the findings in this study were based on nurses' recall of their lived experiences. There were instances where nurses provided inconsistent statements concerning their collaborative practices. It would be beneficial if future research used triangulation methods. Triangulation involves the integration of different sources of data to increase the validity of data findings (Oliver-Hoyo & Allen, 2006). Sources of data can include observations, journal notes, and surveys. The integration of different data sources can help strengthen themes and improve the consistency between nurses' recall of their experiences and direct practices.

Contextual factors, including COVID-19, also served as a limitation to my data collection and analysis. COVID-19 put the world in a state of emergency, and its impact had a devasting effect on the health, income, well-being, and safety of many families. Conducting this research during a pandemic was difficult. As a researcher, balancing my health, safety, work, and school responsibilities during COVID-19 was overwhelming, which likely influenced how I performed this study. Additionally, I was unsure how my participants were adjusting to the pandemic, which added an extra layer of worry and concern regarding asking for their time to assist me with this study. As a result, the pandemic made me more mindful and considerate of my participant's time during data collection. There were instances during my interviews where it may have been helpful for me to probe for additional information. Still, I was hesitant to expand the length of an interview given the uncertainty of the personal circumstances my participants may have been facing. I navigated this internal conflict by prioritizing the questions I had on my interview guide and ensuring the follow-up questions I asked were relevant to my research

questions. Conducting this study when there is not a global pandemic may have positive implications on participant recruitment, data collection, and analysis. In contrast, a future research area could be on the impact of COVID-19 on the collaborative practices to serve youth with chronic health conditions. Understanding how COVID-19 has impacted the operations in a school could help further understand the current approaches being implemented to advance the outcomes of children with medical adversities.

My position as the PI and interviewer in the study posed some limitations. My clinical and research interests center on interprofessional collaboration to serve youth with chronic health conditions, which led me to be very interested in the conversations with the school nurses. Combining these factors placed the participants and me at risk for exhibiting biases in different stages of the study. In the recruitment stage, I informed each school nurse that this was a study for my dissertation, and the sample size would be limited. Due to this information, it is possible that school nurses felt inclined to respond in a socially desirable manner because they hoped to provide me with information that they thought would produce meaningful results. I addressed this limitation by ensuring the anonymity of the participants through the use of pseudonyms and removal of identifiable information during my document. During the interview, school nurses were encouraged to answer openly and honestly about their experiences to limit this bias, and I included opportunities in the discussion for nurses to provide examples of their experiences, which may have encouraged them to report accurately.

Related to my demeanor during the interviews, it is possible that my reactions to specific topics and responses influenced the quality or quantity of information provided by the school nurse. This could lead to school nurses sharing more details when I seemed more passionate or excited and reducing or withholding information if my tone appeared more disapproving. I

attempted to limit this bias by being self-aware of my mood and tone during the interview. During the transcription phase, I noted my interpersonal communication skills while transcribing the interviews and reflected on how they may have influenced the respondent. Upon review, I perceived my presentation as friendly and positive, and I often validated the school nurses' responses, allowing for an informative interview.

Lastly, this study solely focused on school nurses and their lived experiences. Exploring the perceptions and practices of additional educators could be valuable in better understanding how schools serve as a supportive environment for youth with chronic illnesses. Feedback from these stakeholders could serve to further fill the gap in understanding what is considered 'best practice' and the actual services these students receive in schools.

Implications for Practice

The results of this study emphasize school nurses' practices and perceptions in developing and implementing services within an ecological system to support students with chronic health conditions. All school nurses in this study endorsed frequently collaborating with stakeholders to help youth with medical illnesses and discussed specific practices they implement to facilitate the collaboration process. Findings from this study offer suggestions for applied practices.

Children with chronic illnesses live in a multi-systematic environment, and a variety of people, institutions, cultures, and policies play a role in their functioning. As anticipated, institutions that nurses stated contribute to the advancement of children with medical adversities include the home and school setting. Regarding the home environment, this study provided more insight on the role parents play in supporting youth with chronic health conditions. Nurses identified parents as pertinent in coordinating care across systems. Additionally, more is known

about familial barriers that inhibit collaboration across the home and school environment. Barriers that interfere in treatment symptom management, according to school nurses, include limited parent involvement and inaccessible health care. Consequently, school personnel must attempt to identify and implement strategies to help children manage their symptoms to succeed. This includes acknowledging families as being integral in the care of children with chronic health conditions, identifying tools that can increase communication with families, and providing them opportunities to be involved in school discussions related to improving the symptoms of their child.

Another aim of this study was to investigate school nurses' perceptions of the academic and psychological impact chronic health conditions can have on students' educational prosperity. Related to student's well-being, throughout the interviews, I was surprised by how versed nurses were in psychopathology. Multiple nurses described having an extensive background in mental health, which was enhanced by completing psychology college courses, participating in professional development opportunities, and working in psychiatric facilitates. As a result, nurses provided specific examples of how chronic health conditions can exacerbate psychopathological symptoms and provided insight on how medical and psychological symptoms can appear similar. An aspect of psychology that nurses were less explicit with was the adaptive skills that students with chronic health conditions embody. Being knowledgeable in both adaptive and maladaptive symptoms of children with chronic health conditions is important for ensuring that they are holistically viewed and treated. It is vital that educators' knowledge of chronic health conditions be increased, as well as their understanding of the adverse implications these conditions can have on student's well-being. Alongside school nurses, pediatric school psychologists can be valuable in helping promote the medical, academic, and psychological prosperity of children with chronic

health conditions. In addition to traditional training in academic, behavioral, and mental health assessment and intervention, consultation, data-based decision making, and progress monitoring of student outcomes, pediatric school psychologists have specialized training in pediatric health issues in the schools, pediatric psychopharmacology, and psychological assessment of infants and toddlers (Bradley-Klug & Armstrong, 2014), which help prepare them for working with students with chronic health conditions. School nurses and psychologists can play a significant role in educating school faculty on the etiology of specific health illnesses, appropriate treatment procedures, their impact on children's academic and psychological functioning, and appropriate accommodations or interventions. Professional development opportunities for school educators on these topics can be completed in different forms, including formal seminars, mini-workshops, and informal consultation.

Another implication that can be derived from this study is the importance of schools establishing internal and external relationships. I found it admirable that the nurses identified relationship building as a meaningful practice for supporting youth with chronic health conditions. Nurses in this study described establishing school-based connections with teachers, administrators, and social service professionals, to help facilitate the collaboration process. Concerning the social services team, I was surprised that nurses grouped school counselors, psychologists, and social workers as the social services team. Though there are similarities in the roles of these professionals, there are also distinctions. Developing a clear understanding of the unique roles of stakeholders can help identify and address the needs of students with chronic conditions. As school leaders, administrators can play a prominent role in fostering a school climate where professionals have positive relationships with each other. These services can include, implementing a brief seminar that introduces all educators in the school environment,

and the roles they perform in the school. Staff bonding can also be fostered by providing a space for staff to express and problem-solve their needs and making the effort to communicate and show educators that they are valued and appreciated.

External to the school setting, nurses described establishing partnerships with community providers to help increase access to medical care for students. These findings contribute to the literature by identifying a range of professional organizations with whom school nurses collaborate to support youth with pediatric illnesses, such as medicine, dentistry, optometry, religious institutions, and non-profit organizations. Through this study, I learned that implementing this strategy effectively requires being well-informed of the resources available in the community and pro-active in acquiring these resources. Based on the interviews with the school nurses, an effective practice can be generating a master list of the organizations in the local community so these resources can be easily communicated to families. Creating this list can be a collaborative effort amongst all school educators and can help expand the quantity and quality of resources distributed to families.

Conclusion

Exploring school nurses' perceptions and practices working in an ecological system to support youth with chronic health conditions helps to better understand how to address this population's diverse needs in the school setting. Conducting this qualitative study allowed for a more in-depth investigation of how nurses partner with stakeholders to improve these students' educational and health advancement. Educators at schools serve an essential role in aiding in the developmental prosperity of children. As such, this qualitative study was conducted to determine school nurses' perceptions of the academic and psychological impact chronic health conditions have on children's educational performance, identify the stakeholders they perceive as beneficial

for supporting youth, and explore their collaborative practices working with these stakeholders. In the current study, it was evident that how well a child's symptoms were managed played an essential role in their academic outcomes. Furthermore, children with chronic illnesses embody both adaptive and possible maladaptive symptoms. Additionally, nurses identified teachers, administrators, school psychologists, social workers, school counselors, and medical providers as being critical in facilitating care for children. Concerning collaborative practices, nurses stated their primary objectives for collaborating with stakeholders were to improve children's access to medical services, develop individualized health plans, and provide interventions and accommodations. School nurses accomplished these objectives in various ways, including being aware of the community's resources and processes for delivering student's services, and being proactive in advocating for their students' needs. These findings highlight how school nurses work both within and across the school, family, healthcare, and community systems to enhance this population's outcomes. Future research is warranted to further investigate educators' perceptions and practices collaborating in an ecological system to support youth with chronic illnesses. Understanding these experiences can allow educators to brainstorm ways to use their collective expertise to collaborate with school nurses to enhance the overall well-being of youth living with chronic health conditions.

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Appendix A: Initial Email

Dear School Nurse,

I hope you are having a fantastic school year! Last year in August or September, you participated in a survey that allowed me to investigate your collaborative practices with school psychologists, and you expressed interests in being a part of additional research on this topic. I am emailing today to provide you with a summary of those findings and to see if you are interested in participating in my new qualitative study.

Attached to this email is a summary of the findings from the national survey you participated in. Since school nurses have been identified as school-based leaders in providing support to students with chronic health conditions, I am very interested in learning more about how school psychologists can contribute to supporting the success of students with medical adversities. Through this research, I have gained a lot of knowledge, and I greatly appreciate you taking the time to contribute to these efforts. If you have any questions, concerns, or comments about the findings, please feel free to contact me.

While learning about school nurses' relationships with school psychologists is meaningful, it is only one of many factors that can play a role in supporting students with chronic health conditions. To continue my learning, my dissertation aims to understand school nurses' experiences collaborating in an ecological system to support students with chronic health conditions. In essence, I want to go beyond investigating the nurse-psychologist dynamic and understand school nurses' experiences and perceptions serving their students by exploring how they collaborate within and across systems to develop, implement, and evaluate services for students with chronic health conditions. Completing this project will consist of interviewing school nurses for a 1-hour initial interview. All who participate will be provided a $25 gift card to Amazon.

If you are interested in being a part of this study, please complete the brief demographic questionnaire below.

Thank you in advance for your time and assistance.

Sincerely,

Destiny Singleton, M.A.
Principal Investigator
Research Doctoral Student

School Psychology Program
University of South Florida
singleton2@mail.usf.edu

Kathy Bradley-Klug, Ph.D
Secondary Study Coordinator
Associate Dean for Research, Innovation, & Faculty Affairs

Professor, Graduate Program in School Psychology
University of South Florida
kbradley@usf.edu

Appendix B: Demographics Survey for School Nurses

School Nurses' Perceptions and Perspectives Working in an Ecological System
Before participating in the interview, I ask that you please complete this brief demographic questionnaire which will help me assess the diversity of the potential participants. Due to the in-depth nature of this study, I am targeting a small sample size for this phase of my research to allow me to spend substantial time with each school nurse. Consequently, it is possible that some nurses who complete this form may not participate in the study at this time, however, the Pediatric Research Team is passionate about studying this line of work. Hence, more opportunities to participate in research will be available in the future. I thank you for your time and consideration in being involved in this study.

Q1 Gender:

a) Male
b) Female
c) Transgender
d) Other _____

Q2 Age:

e) 18-21 years
f) 22-25 years
g) 26-34 years
h) 35-44 years
i) 45-54 years
j) 55-65 years
k) >65 years

Q3 Race:

l) American Indian or Alaska Native
m) Asian
n) Black or African American
o) Native Hawaiian or Other Pacific Islander
p) White
q) Multi-Racial (please specify)

_____

r) Other (please specify)

_____

Q4 Highest Education Level:

s) High School Diploma
t) LPN
u) R.N.
v) B.S.N.
w) Advanced Degree (please list)

_____

x) Other (please specify)

_____

Q5 Years employed as a nurse in a school setting:

_____

Q6 What state do you work in?

_____

Q7 Level of school

y) Elementary
z) Middle
aa) High

Q8 Grades served (indicate all)

_____

Q9 Community setting

bb) Rural
cc) Suburban
dd) Urban

Q10 Collaboration is defined as two or more people working together to plan and problem-solve for a third-party. An example may include when a school nurse provides ongoing consultation regarding the educational implications and accommodations for asthma, diabetes, cancer, and other medical illness. Other school personnel then provide information that helps the school

nurse understand the scope of services available. On average, how often do you collaborate to serve students with chronic health conditions?

- Never
- Less than a few times a year
- A few times a year
- Once per month
- Once per week
- More than once per week

Q11 Email address:

_____

Q12 Questions, Concerns, or Feedback

_____

_____

_____

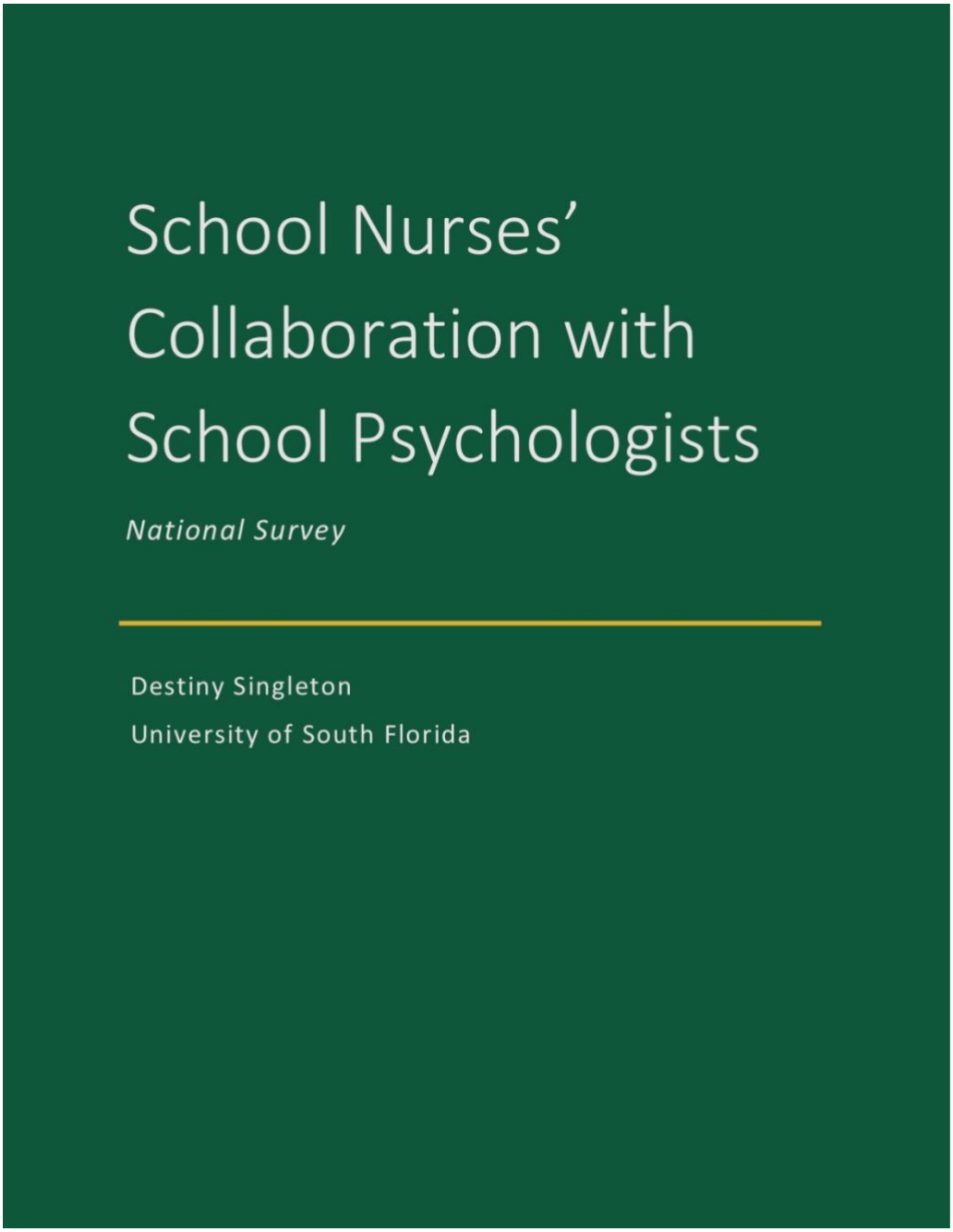
_____

_____

Thank you for completing this demographic form. If you are invited to participate in the interview, you will receive an email from me within the next week asking for your availability.

Have a fantastic day!

Appendix C: Summary of Thesis



INTRODUCTION

The purpose of this study was to gain a preliminary understanding of the extent that school nurses collaborate with school psychologists to serve students with chronic health conditions. This study investigated school nurses' frequency of collaborative practices with school psychologists, school nurses' awareness of the roles of school psychologists, and school nurses' perceptions of the benefits and barriers to collaborating with school psychologists.

RESEARCH QUESTIONS

To develop a greater understanding of school nurses' collaborative practices with school psychologists, the following research questions were investigated:

1. To what extent do school nurses believe collaboration with school psychologists is beneficial to the health of students with chronic illnesses?
2. How often do school nurses collaborate with school psychologists?
3. To what extent are school nurses aware of the roles of school psychologists?
4. To what extent, if any, is there a relationship between perceived roles of school psychologists and collaborative practices?
5. What do school nurses perceive as the benefits and barriers to collaborating with school psychologists?

PARTICIPANTS

A total of 240 school nurses completed the survey. Of the participants, the majority identified as female (98%) and Caucasian (94%). In regard to the age of the participants, most were between the ages of 55-65 years (43%), followed by 45-54 years (32%), 35-44 years (17%), 26-34 years (4%), over 65 years (3%) and 18-21 years (<1%). The majority of the participants had a Bachelor of Science in Nursing (54%), and another advanced degree that was common was a Master of Science in Nursing (43%). Approximately 40% of the sample worked in Massachusetts or North Carolina (20% and 20% respectively). Furthermore, most school nurses in this sample were

employed by the school district (97%) and worked full-time (93%). Additional characteristics regarding the demographic information about the respondents can be found in Table 1.

Table 1
Demographic Characteristics of Study Participants (n=240)

Variable	*N*	%
Gender		
Female	234	98%
Male	3	1%
Other	3	1%
Age		
18 – 21 years	1	<1%
22 – 25 years	0	0%
26 – 34 years	10	4%
35 – 44 years	40	17%
45 – 54 years	77	32%
55 – 65 years	104	43%
> 65 years	8	3%
Race		
Asian	0	0%
American Indian or Alaska Native	3	1%
Black/African American	5	2%
Multi-racial	4	2%
Native Hawaiian or Other Pacific Islander	0	0%
White/Caucasian	226	94%
Other	2	1%
Highest Education Level		
Registered Nurse (R.N)	7	3%
Bachelor of Science in Nursing (B.S.N)	130	54%
Advanced Degree	84	35%
Other	18	8%
Employment Institution		
School District	230	97%
Department of Health	8	3%
Employment Status		
Full time	223	93%
Part time	16	7%

Table 1 continued

Variable	*N*	%
Years Employed as School Nurse		
0-5	37	16%
6-10	48	20%
10-15	56	24%
16-20	58	24%
< 21	38	16%
Other Settings Worked		
In-Patient	219	92%
Out-Patient	47	20%
Physician's Office	78	32%
Residential Facility	34	14%
Health/Walk-in Clinic	44	18%

**Note*. Participants were able to select more than one response for other settings worked.

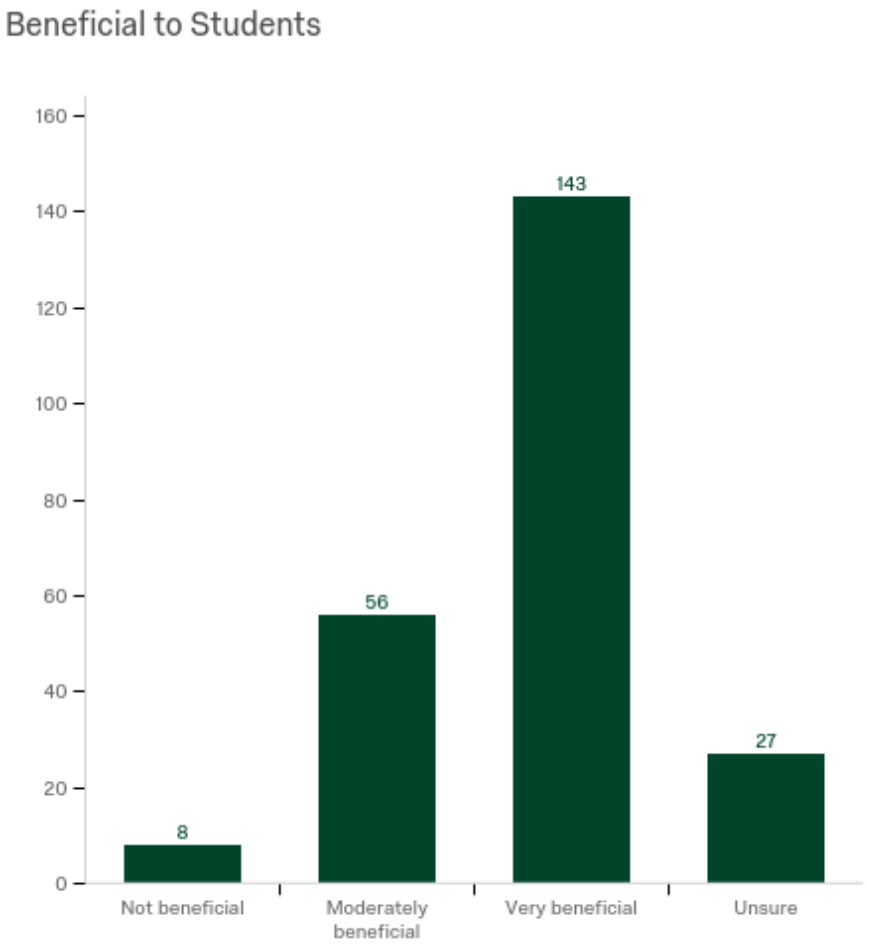
SCHOOL SETTING

The majority of school nurses in this sample worked in elementary schools (56%), followed by high school (25%) and middle school (19%). Furthermore, most school nurses were employed in urban settings (56%), and others worked in suburban (47%) and rural (29%) schools. The majority of school nurses in this survey were employed in Title 1 schools (65%) and only one respondent indicated being employed in a private or charter school.

RESEARCH QUESTION 1

To what extent do school nurses believe collaboration with school psychologists is beneficial to the health of students with chronic health illnesses (n = 234 respondents)?

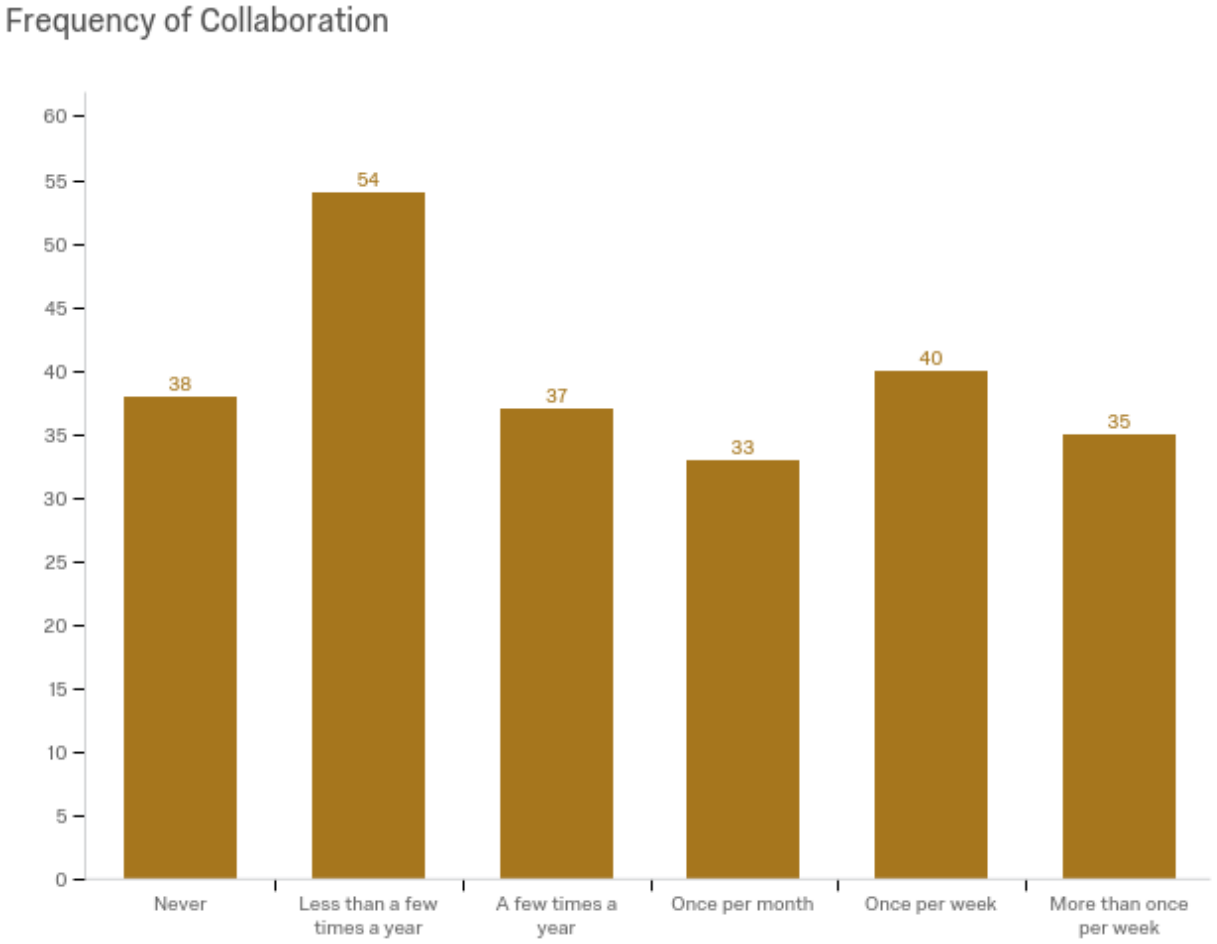
The majority of participants (*n* = 143*;* 61%) indicated that collaborating with school psychologists is '*Very Beneficial'* to the health of students with chronic health conditions. Approximately 24% (*n* = 56) of the school nurses perceived collaborating with school psychologists as '*Moderately beneficial'*; and 3% (*n* = 8) viewed the collaborative process as '*Not Beneficial'.* Less than a quarter (*n* = 27; 12%) of participants were *'Unsure'* if collaborating with school psychologists is beneficial for supporting students with chronic health conditions.



RESEARCH QUESTION 2

How often do school nurses collaborate with school psychologists (n = 237 respondents)?

The frequency of collaboration varied between school nurses. The most frequent response was '*Less than a few times a year'* in which 23% (*n* = 54) of participants selected this option. Furthermore, approximately 56% of respondents reported low levels of collaboration, by selecting either *'A few times a year' (n* = 37; 16%), *'Less than a few times a year'* (*n* = 54; 23%), or *'Never'* (*n* = 38; 16%). The other participants indicated collaborating with school psychologists more frequently, by selecting '*Once per month'* (*n* = 33; 14%), *'Once per week'* (*n* = 40; 17%) *or 'More than once per week' (n* =35; 15%).



RESEARCH QUESTION 3

To what extent are school nurses aware of the roles of school psychologists?

As shown in Table 2, the role of school psychologists that school nurses are the most aware of is *Consultation* (94%). Additionally, the majority of school nurses indicated that additional roles of school psychologists include *Academic assessment* (78%); *Academic intervention* (51%); *Behavioral assessment* (92%); *Behavioral intervention* (72%); *Crisis intervention* (69%); *Data-based decision making* (75%); *Guidance* (70%*); Interprofessional collaboration* (83%); *Mental health assessment* (81%); *Mental health intervention* (70%), and *Progress monitoring student outcomes* (71%). The role that was the most underreported by school nurses was *Health Prevention*, in which only 19% of school nurses believed that this was a role of school psychologists.

Table 2
Percent Distribution of School Nurses' Perception of the Roles of School Psychologists

	n	Sample Endorsed "*Yes*"	Sample Endorsed "*No*"
Consultation	236	94%	6%
Behavioral Assessment	236	92%	7%
Interprofessional collaboration	232	83%	17%
Mental health assessment	234	81%	18%
Academic assessment	230	78%	22%
Data-based decision making	227	75%	25%
Behavioral Intervention	228	72%	28%
Progress monitoring of student outcomes	230	71%	29%
Guidance	227	70%	30%
Mental health intervention	226	70%	31%
Crisis intervention	229	69%	31%
Academic intervention	221	51%	49%
Health prevention	214	19%	81%
I do not know	107	9%	91%

**Note*. Participants were able to select more than one response.

RESEARCH QUESTION 4

To what extent, if any, is there a relationship between perceived roles of school psychologists and collaborative practices?

The mean numeric ratings demonstrated an overall moderate awareness of the roles of school psychologists (M = .71, SD= .24) and a frequency of collaboration averaging to 'A few times a year' (M = 2.37, SD = 1.70). Results demonstrated a statistically significant positive relationship between the awareness of the roles of school psychologists and the frequency of collaborative practices (r = .47, p < .01). More specifically, the more aware a school nurse was of the skillset of a school psychologist, the more frequently they engaged in collaborative practices

RESEARCH QUESTION 5

What do school nurses perceive as the benefits and barriers to collaborating with school psychologists?

The benefits that were selected the most by school nurses were *Cross-disciplinary problem solving* (96%) and *Sharing resources* (96%). Additionally, the majority of school nurses also reported that improving student outcomes (92%), assessing student progress (92%), feeling valued for expertise (86%) and avoiding duplication of services (80%) were benefits of collaborating with a school psychologist. Table 3 provides a visual of the responses endorsed by school nurses.

Table 3
Percent Distribution of School Nurses' Perception of the Benefits of Collaboration

	n	Sample Endorsed "*Yes*"	Sample Endorsed "*No*"
Cross-disciplinary problem-solving	227	96%	4%
Share Resources	227	96%	4%
Assessing student progress	227	92%	8%
Improved student outcomes/health	230	92%	19%
Feeling valued for expertise	224	86%	14%
Avoiding duplication of services	223	80%	20%

**Note*. Participants were able to select more than one response.

As shown in Table 4, the most common barrier school nurses selected was that the school psychologist is not accessible (*n* = 86; 38%), followed by time (*n* = 83; 37%). Obstacles that were selected infrequently include multiple schools (*n* = 13; 6%) lack of alignment with professional responsibilities (*n* = 3; 1%), differing views on child development (*n* = 2; 1%), and not beneficial to practice (*n* = 1; <1%).

Table 4
Primary Barrier of Collaboration (n= 227)

	n	%
School psychologists are not accessible	86	38
There is not enough time in the day	83	37
I have too many schools	13	6
Not part of my responsibilities	3	1
Differing views on child development	2	1
It is not beneficial to my practice	1	<1

**Note*. Participants selected only one response.

SUMMARY

Results of these analyses indicate that most school nurses view collaboration with school psychologists as very beneficial to the health of students with chronic health conditions. Commonly selected benefits by school nurses were (1) opportunity for cross-disciplinary problem solving, (2) improving student outcomes/health, (3) sharing resources, (4) assessing student progress, (5) feeling values for expertise, and (6) avoiding duplication of services. Furthermore, the majority of school nurses perceived school psychologists as encompassing many roles, with the most common being consultation. However, though school nurses acknowledged the value of collaborating with school psychologists and were aware of many of their roles, the majority of school nurses reported a low frequency of collaboration with school psychologists. More specifically, over half of the school nurses in this sample reported collaborating with school psychologists a few times a year, less than a few times a year, or never.

Further analysis was calculated to identify whether a relationship existed between the participants' perceived roles of school psychologists and their frequency of collaboration. Results indicated a statistically significant and positive relationship between awareness of school psychologists' roles and frequency of collaborative practices. In other words, the more aware a

school nurse was of the roles of a school psychologist, the more frequent their collaborative practices ($r = .47$, $p < .01$).

School nurses identified some barriers to collaborating with school psychologists in regard to serving students with chronic health conditions. The primary barrier to the collaborative process reported by school nurses was the limited accessibility of the school psychologist followed by time. Additional barriers that were reported by a small sample of school nurses (less than 10%) that inhibited the collaborative process was a lack of alignment with professional responsibilities, differing views on child development, and collaboration not being beneficial to practice.

Appendix D: Interview Guide

School Nurses' Attitudes and Perceptions Toward Supporting Students with Chronic Health Conditions in an Ecological System

Welcome

Good afternoon, how are you today?

Thank you for agreeing to participate in this discussion with me. My name is Destiny Singleton and I am currently a fourth-year school psychology doctoral student at the University of South Florida. My research and clinical interests are related to exploring how stakeholders to provide academic and psychological supports to students with chronic health conditions. Through my research and practicum experiences in the school setting, I have learned that students with chronic health conditions have diverse needs, and school nurses play a pertinent role in providing services to this population. My journey in this line of work begins with learning school nurses' current perceptions and practices to serve students with chronic health conditions.

As was outlined in my initial email, this interview will last about approximately an hour. I do want to remind you that the conversation will be audio recorded. Is this okay? Great. After the study has been concluded all of the audio files will be destroyed. Also, confidentiality will be maintained at all times. My dissertation write up will not include any identifiable information, and I will use a pseudonym when discussing your experiences in my document. Do you have a preference for what your pseudonym will be? Great, do you have any questions before we get started?

For clarity, I do want to provide the definitions of two terms that are relevant in this study. The first is a chronic health condition. Based on my research, I am defining a chronic health condition as an illness that occurs for three or more months and can be controlled and not cured. Another term is collaboration, which will be defined as two or more parties working together to plan and problem-solve for a third party. Therefore, it will involve working with another stakeholder to develop, implement, and evaluate services for a child with a chronic health condition. Do you have any questions about the definitions?

<u>Introduction</u>

I would like to get started by learning about your professional and educational journey to become a school nurse.

1. **What influenced you to become a school nurse?**

2. **What do you enjoy about being a school nurse?**

3. **I read in the demographic screener that you're currently employed in a (**insert characteristics of school**). How would you describe your role at this school?**

<u>Stakeholders and Collaborative Practices</u>

4. *As I highlighted before, I am very interested in the field of school nursing due to how integral school nurses can be in supporting the diverse outcomes of children with chronic health conditions.* **Based on your experiences in the school setting, in what ways have you seen chronic health conditions impact the academic success of your students?**

5. **What ways have you seen chronic health conditions impact the mental health of your students?**

6. **In situations where students are in need of services, what is the process at your school for developing, implementing, and evaluating services for them?**

7. **In addition to you supporting students with chronic health conditions, what other stakeholders in the school play a role in supporting students with chronic health conditions?**
    - *How does (x) contribute to the development, implementation, or evaluation of services for children with chronic health conditions?*
    - *What is your relationship like with (x) to serve students with chronic conditions?*
    - *How often do you collaborate with (x)?*
    - *What are the benefits of collaborating with (x)?*
    - *What are some barriers to collaborating with (x)?*

8. **What stakeholders outside of the school setting do you believe play a role in supporting students with chronic health conditions?**
    - *How does (x) contribute to the development, implementation, or evaluation of services for children with chronic health conditions?*
    - *What is your relationship like with (x) to serve youth with chronic conditions?*
    - *How often do you collaborate with (x)?*
    - *What are the benefits of collaborating with (x)?*
    - *What are some barriers to collaborating with (x)?*

That is all the questions that I have. Is there anything else that you think is important to share? Great! Thank you again for taking the time to be a part of my research. I have really enjoyed getting to learn more about your experiences, as well as the general field of school nursing. Today I will be sending you your $25 gift card to Amazon, and please feel free to contact me at any time if you have any questions or concerns.

Appendix E: Institutional Review Board Letter of Approval

EXEMPT DETERMINATION

July 15, 2020

Dear Destiny Singleton:

On 7/14/2020, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY001139
Review Type:	Exempt 2
Title:	School Nurses' Attitudes and Perceptions Toward Supporting Students with Chronic Health Conditions in an Ecological System.
Protocol:	• Final Destiny Singleton Dissertation IRB Protocol 7.13.20.docx;

The IRB determined that this protocol meets the criteria for exemption from IRB review.

In conducting this protocol, you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Please note, as per USF policy, once the exempt determination is made, the application is closed in BullsIRB. This does not limit your ability to conduct the research. Any proposed or anticipated change to the study design that was previously declared exempt from IRB oversight must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant a modification or new application.

Ongoing IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a new request to the IRB for a determination.

Sincerely,

Jennifer Walker

IRB Research Compliance Administrator

Institutional Review Boards / Research Integrity & Compliance
FWA No. 00001669
University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 / 813974-5638